



State of Illinois  
Department of Innovation and Technology  
Future State Technology  
Playbook

April 20, 2016

# Introduction

In Q1 2016, the State of Illinois launched an IT Transformation initiative. In addition to other areas, the scope included 3 key domains (Infrastructure, Applications, and IT Service Management) within the Technology area.

Through this initiative, there was an emphasis on understanding the current environment and forming a strategy to enable better service to Illinois residents / businesses, maximize the use of technology, and ultimately foster innovation at the State.

Over the course of this effort, the team conducted regular working sessions to collaborate and align on this future vision. Leveraging lessons learned and State subject matter expertise, the team worked together to consolidate thinking into a structured set of experiences and actionable plans.

This Strategy and Roadmap briefing documents these plans, and articulates linkages between the strategy, existing program portfolio and expected outcomes.

The subsequent pages include a baseline of the current state, the strategic vision, and suggested roadmap to help the State of Illinois achieve its overall vision. This document is intended to be a living strategy document, to continually refined based on new strategic decisions, optimization opportunities, and other shifts in direction.

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Section 1:

Executive Summary

# Executive Summary

## Current State Baseline

- Currently, the State is significantly behind in technology and faces many challenges to modernize technical debt, correct out state of balance cost structures, remediate security vulnerabilities, etc.
- These challenges have prevented the State from providing the level of service wanted and needed by customers
- A current state assessment was performed to look deeper into the infrastructure, applications, and service management processes and identify potential opportunities of improvement support
- Through a current state assessment, a number of consistent themes emerged which, along the landscape is on par with the strategic vision, will serve industry peers; domains such as the basis for the future state recommendations that follow.

## Strategic Vision

The state of Illinois has set out on a journey to build...

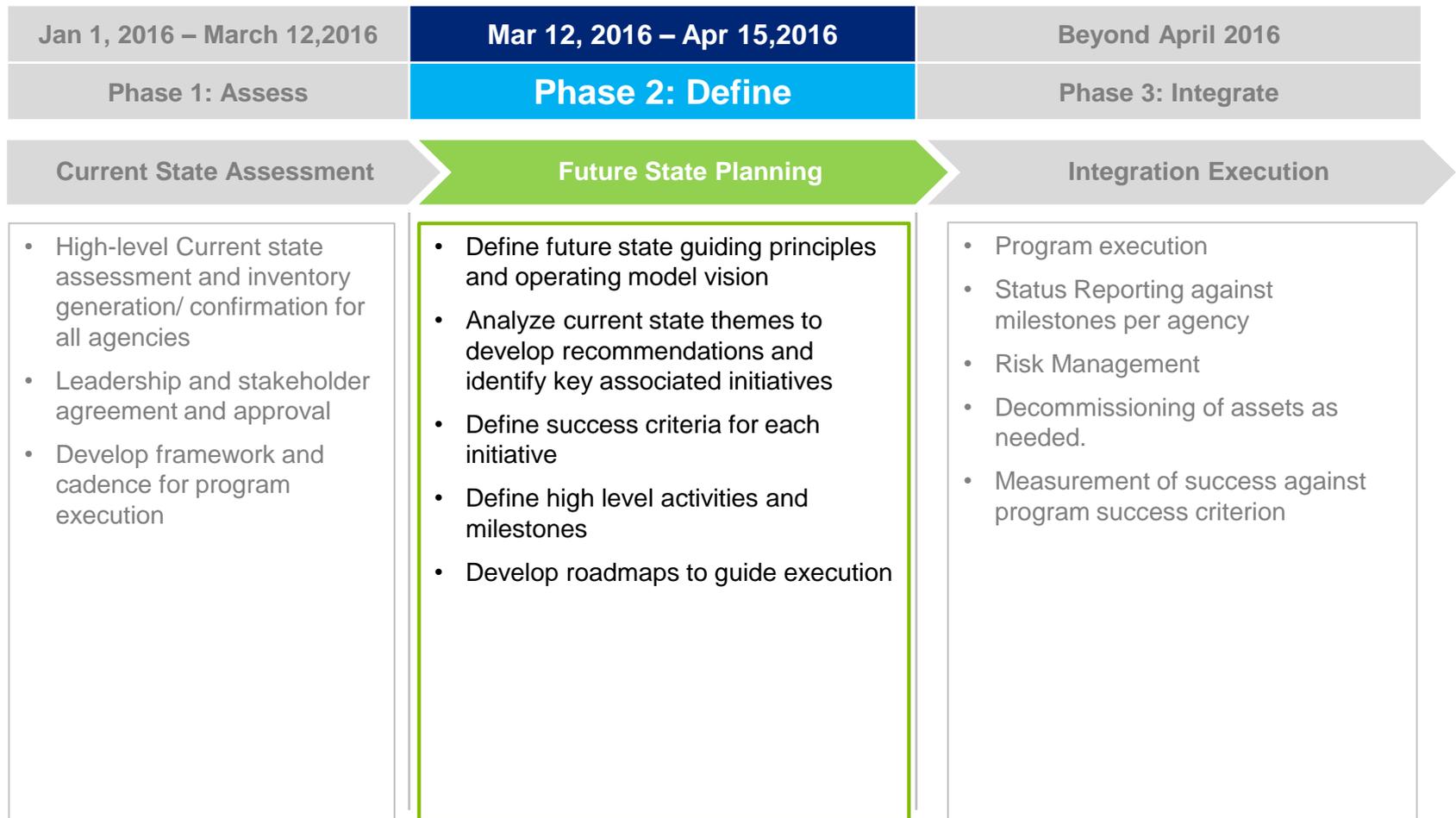
- A place where constituents can easily engage with the State across multiple mediums, especially mobile
- An environment where data is secure and IT systems are protected from threats
- An innovative technology environment with next-generation platforms and systems – free of technical debt
- An environment where IT spend and cost structures are in balance and aligned with the value delivered
- A place where agencies and central IT are aligned and freely share information – free from fragmentation and fragility of IT

## Roadmap

- The vision and roadmap sections include Playbook includes core foundational projects to improve the business of IT, Improve the business of the State using IT, and ultimately keep pace with industry and associated technology trends
- Through the roadmap, the state will be able recommends additional efforts and initiatives to push the envelope and claim enable the State to reclaim a leadership role within the public sector industry

# High Level Program Timelines

At a high level, the project would follow a multi-phase approach to complete this integration effort



# IT Guiding Principles

In 2015, the State of Illinois selected Deloitte to assist in designing and implementing a comprehensive Information Technology service delivery organization

*As part of its model, the State is seeking to:*



**Build a modern, strategic, and comprehensive technology plan** in order leverage talent and work more collaboratively



**Execute more strategically**, ensuring investments are tied to program priorities and lead to measurable results



**Secure data** across the State and reduce the risk of cyber attacks



**Create “One Stop Shop” solutions** that allow constituents and businesses to more easily access and use State services



**Enable data to be shared, accessed, and used effectively** in order to provide a better user experience

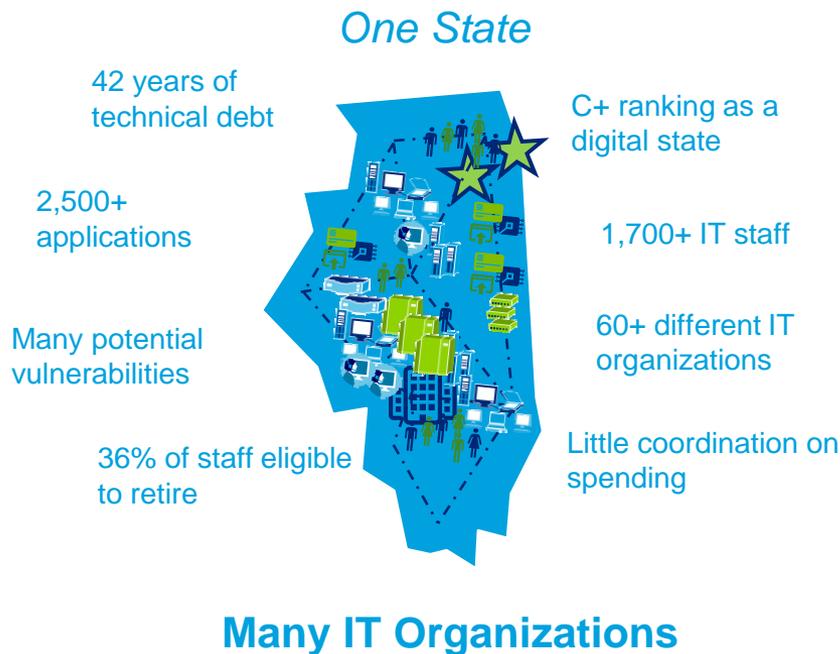


**Follow through on past legislative initiatives**, such as the authorization to consolidate all IT Functions back in 2003

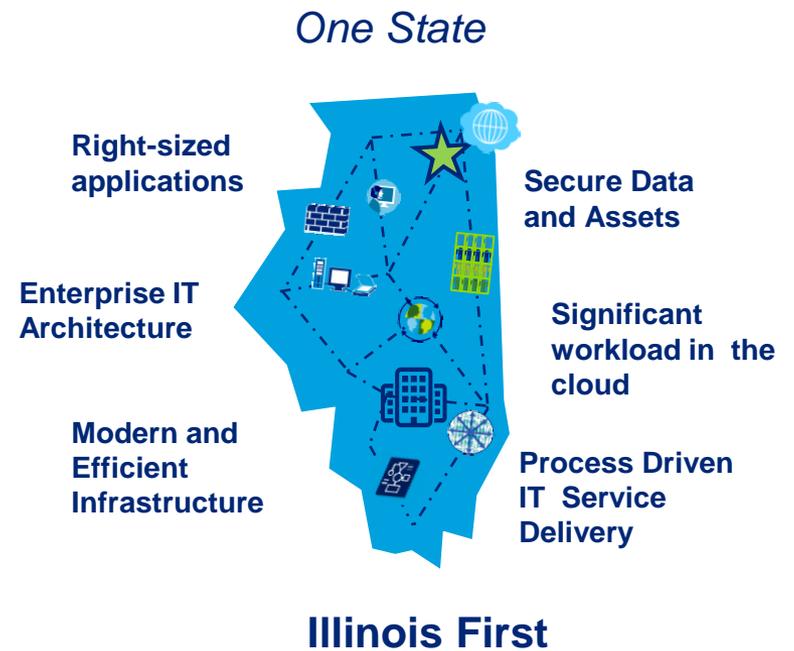
# IT Landscape

Efficiencies from IT Transformation will enable key reinvestments in modern technologies, a unified IT workforce, and higher quality services supported by collaborative IT governance

## Current IT Environment



## Future IT Environment



# Initiative Overview

The following set of initiatives build the foundation for the State to transform and ultimately achieve the future state vision

	#	Initiative	Description
 <b>A.</b> Infrastructure	<b>A.1</b>	Infrastructure Consolidation	Continuing the effort to consolidate agency IT infrastructure, including servers, storage, network and security systems, into the DoIT managed data center in a cohesive manner
	<b>A.2</b>	Infrastructure Modernization	Modernize DoIT IT infrastructure to create a more secure and scalable IT infrastructure offering, bringing systems up to standards and identifying new technologies to implement
	<b>A.3</b>	Backup And Disaster Recovery	Develop a robust backup and disaster recovery process which will enable the State of Illinois to rapidly adapt and respond to any dynamic changes with limited impact to the business
	<b>A.4</b>	“Cloud First”	Identify initiatives and execute on the roadmap to support the implementation of the Cloud First strategy. Develop an enterprise architecture that supports the cloud strategy and includes updated operating model changes to deliver cloud solutions
 <b>B.</b> Applications	<b>B.1</b>	Application Rationalization	Develop a strategy to improve the existing application portfolio and reduce functionality overlaps, technical limitations, and maintenance costs through application consolidation across agencies
	<b>B.2</b>	Application Modernization	Develop a strategy to get the most value from the existing applications by modernizing the application platforms and identifying new applications to replace the current application capabilities
	<b>B.3</b>	Digital Innovation	Create bi-modal IT to deliver constituent centric platforms and tools
 <b>C.</b> Service Management	<b>C.1</b>	Service Desk Integration	Bring together disparate service desks throughout the State to leverage scale and improve the efficiencies in which service delivery and support are provided
	<b>C.2</b>	ITSM Processes	Develop a service mindset and standardize service management processes in order to drive high quality and consistent service delivery
	<b>C.3</b>	Service Catalog	Implement a unified IT Service Catalog that provides customers with an easy and intuitive way to find the services offered and supports a service oriented IT organization
	<b>C.4</b>	Customer Engagement	Put in place a model that builds consistency with the way customers are engaged and better enables DoIT to provide value added services.

# Mapping Initiatives to Strategic Objectives

The proposed initiatives are highlighted by domain below, along with alignment against strategic objectives

	#	Initiative Name	Strategic Objectives									
			1	2	3	4	5	6	7	8	9	10
 <b>A.</b> Infrastructure	A.1	Infrastructure Transformation		✓						✓	✓	✓
	A.2	Infrastructure Modernization		✓	✓	✓	✓	✓		✓	✓	✓
	A.3	Backup and Disaster Recovery		✓		✓	✓	✓		✓		✓
	A.4	Cloud First Implementation		✓				✓		✓	✓	✓
 <b>B.</b> Applications	B.1	Application Rationalization		✓	✓	✓				✓	✓	✓
	B.2	Application Modernization		✓	✓	✓	✓	✓		✓	✓	✓
	B.3	Digital Innovation	✓	✓	✓	✓			✓		✓	✓
 <b>C.</b> Service Management	C.1	Service Desk Integration		✓	✓				✓	✓	✓	
	C.2	ITSM Process Standardization		✓	✓				✓	✓	✓	✓
	C.3	Service Catalog	✓							✓		
	C.4	Customer Engagement	✓							✓		

1 Consider Agencies  
 2 Think State-wide

3 Common over Custom  
 4 Data is an Asset

5 Data Security  
 6 Use Standards

7 Customer Centric  
 8 Quality Operations

9 Simple over Complex  
 10 Reusable Design



Deloitte.

# A.1 Infrastructure Consolidation

## Desired Future State

- **Consolidated and Highly Efficient IT Infrastructure**
  - All agency systems consolidated within the DoIT data center including all servers, storage, network, security and database infrastructure
  - Standards for infrastructure with consistent and efficient provisioning processes
  - Risk through the management and oversight of all DoIT IT assets within one centralized location
- **Uniform user experience**
  - Uniform experience for users irrespective of agency for all infrastructure services
  - A single team and standardized processes for requesting new or modified infrastructure services

## Level of Effort

\$0-1 Million   \$1-5 Million   \$5+ Million

- Project Manager
- DoIT Architect
- DoIT Domain SMEs: *Storage, Server, Network, Security*
- Agency Domain SMEs: *Storage, Server, Network, Security*
- Vendor SMEs

## Potential Approach

- **Well planned and standard consolidation plans**
  - Instead of the traditional “lift and shift”, plan the consolidation using virtualization and network transfer methods
  - Detailed task lists with contingency plans to minimize the time to consolidate
- **Consolidate and remediate non-standard infrastructure**
  - Develop creative and flexible solutions for consolidating one off systems
  - Re-platform and consolidate at the source agency when possible
- **Consolidate agencies in a phased manner**
  - Use learnings from earlier consolidations to improve consolidations in the future

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Gather data and identify scope and order of agencies for consolidation
- Develop high level schedule for consolidation



**Short-Term**  
July '16 – July '17

- Develop consolidation approaches
- Develop playbook approach for consolidation
- Complete Wave 1 consolidation in a phased manner



**Long-Term**  
July '17 and Beyond

- Complete Wave 2 and Wave 3 consolidations
- Remediate any one-off systems, as applicable

# A.2 Infrastructure Modernization

## Desired Future State

- **Modernized IT infrastructure**
  - Current DoIT infrastructure- compute, storage, network and security with a modern architecture and current supported platforms and operating systems
  - Infrastructure built on future technology platforms that are scalable, flexible and adaptable to enable the State to offer innovative services for customers
- **More Secure IT Infrastructure**
  - Modern infrastructure with updated security standards
- **Architecture Standards that Support Modernization**
  - An architecture that is scalable and flexible to adapt to the needs of State agencies and administration
  - As new technologies are available and updates from vendors are developed, DoIT will evaluate infrastructure standards to determine if changes should be made across the enterprise

## Level of Effort

\$0-1 Million   \$1-5 Million   **\$5+ Million**

- Project Manager
- DoIT Architect
- DoIT Domain SMEs: *Storage, Server, Network, Security*
- Agency Domain SMEs: *Storage, Server, Network, Security*
- Vendor SMEs

## Potential Approach

- **Understand scope and drivers for modernization**
  - Build current IT standards and perform a gap analysis to understand scope of modernization
  - Understand drivers for modernization (e.g. security vulnerability) due to out of support hardware or software
- **Develop program plan for modernization**
  - Prioritize drivers and develop waves for modernization
  - Create a detailed program plan based on driver prioritization
- **Modernize infrastructure based on prioritization**
  - Modernize infrastructure elements based on program plan

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Gather inventory and identify scope and drivers of modernization
- Prioritize components to be modernized



**Short-Term**  
July '16 – July '17

- Develop modernization program plan
- Develop projects to address modernization program
- Start execution of modernization program



**Long-Term**  
July '17 and Beyond

- Continuously update infrastructure as necessary

# A.3 Backup and Disaster Recovery

## Desired Future State

- **Comprehensive Disaster Recovery Process**
  - A comprehensive disaster recovery process that will enable the State to rapidly adapt and respond to declared disasters and continue operations with planned impacts to technology systems and operations
  - A well established and structured protocol for managing and communicating a disaster
- **Updated Backup And Restore Process**
  - Updated backup and restore processes to support recovery processes and disaster recovery strategy
  - Planned and executed alignment with Statewide and Federal policies for backup
  - Capacity planning for future growth
  - Tested restore procedures so that staff are trained on the processes for restores

## Level of Effort

\$0-1 Million   \$1-5 Million   \$5+ Million

- Project Manager
- DoIT Domain SMEs: *Storage, Server, Network, Security*
- Agency Domain SMEs: *Storage, Server, Network, Security*
- Vendor SMEs
- Agency Business Representatives

## Potential Approach

- **Develop the DR strategy in tune with business recovery needs**
  - Understand business recovery needs and develop technical processes to support disaster recovery strategy
- **Introduce or update processes to accommodate DR strategy**
  - Introduce standardized IT processes and update the existing DoIT DR plan to accommodate the updated DR strategy
  - Once disaster recovery process is in place, perform timely testing
- **Update backup procedures and plan for added capacity**
  - Create updated backup procedures for newly consolidated agencies and confirm capacity of backup systems meets the new requirements

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Gather business recovery requirements for consolidated agencies
- Develop a detailed plan to address disaster recovery needs



**Short-Term**  
July '16 – July '17

- Add backup capacity and test recovery processes
- Put disaster recovery processes in place
- Test disaster recovery process



**Long-Term**  
July '17 and Beyond

- DR strategy in place and operational with regular DR testing schedule

# A.4 Cloud First

## Desired Future State

- **Best-in-class IT Services enabled through cloud computing**
  - Progress in achieving the State’s cloud compute initiatives
  - A highly agile and nimble cloud environment to accelerate the application development processes
  - Cost savings through efficient use of public cloud resources
- **Cloud computing standards are integrated into the overall IT strategy**
  - Cloud is the de-facto standard for new IT initiatives
  - Cloud offerings align with business strategy, business processes, and overall IT strategy

## Level of Effort

\$0-1 Million | \$1-5 Million | \$5+ Million

- Project Manager
- Cloud Architect
- DoIT Domain SMEs: *Storage, Servers, Network, Security*
- Application SMEs

## Potential Approach

- **Develop a plan and focus first on quick wins**
  - Develop a high level desired end state reference model
  - Review the current state architectures and application design patterns and identify candidates for cloud computing
  - Develop a cloud implementation detailed plan, focusing first on supporting services (backups, storage, test, QA etc.) and other similar areas that offer quick wins
- **Integrate Cloud into enterprise architecture standards**
  - Align the Cloud reference model with architecture standards along each of the architecture domains (server, storage, database, security, and network)

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Initiate a detailed Cloud planning effort
- Assess the current business and architecture capabilities



**Short-Term**  
July '16 – July '17

- Identify vendors to partner for Cloud services
- Implement the first Cloud solutions



**Long-Term**  
July '17 and Beyond

- Continue delivering Cloud programs
- Measure success and adjust the Cloud strategy based on learnings and advancements in technologies

# B.1 Application Rationalization

## Desired Future State

- **The application portfolio is nimble and modern**
  - Fewer applications to support a more flexible and extensible platform with lower overall operational costs
- **Enterprise capabilities enable State resources to be shared across agencies and efficiently used**
  - Fewer areas of overlap where separate applications are used for the same business capability
  - Increased sharing of application processing between agencies
- **Modern government services, enabled by the application portfolio to better align with customer expectations**
  - Better services and service quality for customers through a stable set of enterprise applications
  - More consistent customer experience through seamless engagement across agencies

## Level of Effort

\$0-1 Million   \$1-5 Million   **\$5+ Million**

- Project Manager
- Application Architect
- Agency Application SMEs

## Potential Approach

- **Implement enterprise application standards**
  - Standardize on software development languages
  - Implement governance standards in line with the overall governance model
- **Find and reduce unnecessary capability overlaps**
  - Re-platform technologies that are no longer supported
  - Retain, retire, and rationalize the remaining applications
- **Implement application architectures and scalable application designs**
  - Provide development platforms that can develop code quickly
  - Implement a code re-use program

## Recommended Prioritization



### Immediate

April '16 – July '16

- Inventory agency applications
- Assess application capabilities for one pilot agency



### Short-Term

July '16 – July '17

- Evaluate applications for the remaining agencies
- Begin retiring and rationalizing agency applications



### Long-Term

July '17 and Beyond

- Continue rationalizing agency applications

# B.2 Application Modernization

## Desired Future State

- **The application portfolio is more efficient and less costly to maintain**
  - Lower labor costs due to optimizing business processes and automating previously manual processes
  - Lower infrastructure costs through a reduced application footprint and more efficient application processing
  - Fewer maintenance and operational activities through standardized applications utilizing current technology
- **Applications are modern and operate on modern supported platforms**
  - Less time spent extending or modifying legacy systems through the use of modern service oriented architecture
  - Business process standardization across multiple agencies is enabled through modernized application features, such as automated workflow
  - Standards align with the enterprise architecture

## Level of Effort

\$0-1 Million | \$1-5 Million | **\$5+ Million**

- Project Manager
- Application Architect
- Agency Application SMEs

## Potential Approach

- **Modernize in a measured way**
  - Develop a risk-based roadmap to address modernization
  - Start with obvious high-value areas, such as applications built on unsupported platforms, and begin migrating to technologies on the long term roadmap
  - Identify target architecture solutions (i.e. ERP) to address future state application capabilities
- **Operationalize standards**
  - Implement ongoing processes for identifying non-standard applications and re-platforming them
  - Establish processes for evaluating new application development to maintain ongoing alignment with the target application architecture

## Recommended Prioritization



**Immediate**  
*April '16 – July '16*

- Develop detailed modernization plan
- Identify target modernization capabilities
- Identify modernized solutions



**Short-Term**  
*July '16 – July '17*

- Develop integrations and customizations in waves and deploy modernized solutions



**Long-Term**  
*July '17 and Beyond*

- Implement continual modernizations

# B.3 Digital Innovation

## Desired Future State

### A constituent centric delivery model for IT

- IT is an enabling hub for constituent access to services, data and government
- Modern access and delivery of program information and services

### A planned approach and structure to deliver innovation

- Nimbleness and agility in delivery of innovation not hindered by the technical debt of the state

### Innovation at the edge

- Core services delivered by DoIT freeing up agency mindshare to conceive of and deliver new constituent centric solutions and collaborate on their use

## Level of Effort

\$0-1 Million   \$1-5 Million   \$5+ Million

- Agency incubator leads
- DoIT Leadership
- Agency Leadership
- Domain SMEs (business, technology, solution delivery, data/information management, talent)

## Potential Approach

### Define delivery modes for different services and capabilities

- Conduct strategy workshops with leadership across the State to agree on a vision

### Build structural supports

- Build enterprise governance
- Design delivery models
- Train staff and build capabilities

### Launch, Deliver and Iterate

- Launch service and capabilities through pilots and incubators
- Review and assess successes
- Incorporate lessons learned

## Recommended Prioritization



### Immediate

April '16 – July '16

- Initiate agency engagement and build incubators (in progress)
- Design governance and operating model (in progress)



### Short-Term

July '16 – July '17

- Roll out governance model
- Roll out operating model
- Pilot incubator services and delivery



### Long-Term

July '17 and Beyond

- Roll incubators into centers of excellence or services
- Assess results, document lessons learned, revise strategy as necessary
- Pilot additional incubators

# C.1 Service Desk Integration

## Desired Future State

- **Services have higher uptime and fewer disruptions**
  - Standardized processes and escalation/routing protocols reduce customer experience disruptions
  - Roles and ownership are clearly defined and tools are in place to enable easier management of incidents
  - Documentation is available at the right level of detail, and training is provided to staff
- **DoIT provides better service delivery**
  - Staff are trained, knowledgeable, and function as one cohesive service desk delivering a consistent message to the customer
- **Customers experience high satisfaction levels**
  - Support models in place enable the level of service needed by customers
  - Continual service delivery improvements through collecting and incorporating feedback

## Level of Effort

\$0-1 Million   \$1-5 Million   \$5+ Million

- Project Manager
- DoIT Service Desk SME
- Communications Coordinator
- Process Architects
- Vendor Tool SMEs
- End User Training Lead

## Potential Approach

- **Define “ways of working”**
  - Document detailed process guides and rollout in a prioritized way based on impact
  - Utilize tools and automation where feasible
- **Continually measure, report, and improve**
  - Define key metrics for service delivery and implement mechanisms to gather feedback from end users
- **Implement a standard approach to integration**
  - Integrate new staff in a consistent manner, providing them with the tools, processes, and other information they need to be productive

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Gather data and identify scope and order of agencies for integration
- Develop appropriate service performance measurements for Deployment model to ensure quality of services provided



**Short-Term**  
July '16 – July '17

- Develop service management processes
- Develop service desk capabilities
- Conduct phased integrations of agencies



**Long-Term**  
July '17 and Beyond

- Continue with phased integrations
- Continue implementing continual service improvements

# C.2 ITSM Processes

## Desired Future State

- **Processes are adaptable to future business needs**
  - Service Management processes are efficient and utilize best practices
- **Customers have a consistent experience when interacting with DoIT**
  - Processes are easy to understand, regularly followed by support staff, and standardized across the State
  - Data exchange and interoperability exists between the processes and tools
- **Controls are in place to identify and proactively correct deviations**
  - KPIs are used to enable outcome based management

## Level of Effort

\$0-1 Million | \$1-5 Million | \$5+ Million

- Project Manager
- Process Design Architect
- DoIT Domain SMEs: *Storage, Server, Network, Security*
- Communications Coordinator
- Training Lead

## Potential Approach

- **Solidify “Core” Service Management processes**
  - Implement a measured approach to improvement, focusing first on service delivery and service support processes
  - Incorporate process best practices
- **Integrate across the state**
  - Define standard service management processes
- **Address all aspects of a process, not just the process steps**
  - Implement governance and introduce process ownership
  - Define and manage through Key Performance Indicators (KPIs)
  - Fully utilize tools available and automate where available

## Recommended Prioritization



**Immediate**  
April '16 – July '16

- Establish service management model
- Establish standard operating procedures for key areas
- Define “core” ITSM processes



**Short-Term**  
July '16 – July '17

- Define supplemental processes
- Define IT Operational processes
- Define remaining in scope processes
- Stand up service management organization (part of talent transformation)



**Long-Term**  
July '17 and Beyond

- Review process performance and implement continual service improvement

# C.3 Service Catalog

## Desired Future State

- **Customers have consistent and positive experiences when ordering services**
  - Customers have clear expectations of service delivery
  - Alignment with service delivery expectations and service delivery fulfillment
- **DoIT provides a convenient one-stop shop for IT services**
  - A single “master” listing of services for customers
  - Clarity around what service features are included (and not included)
  - Clarity around service costs and service details
- **The catalog offers an accurate catalog of services**
  - Ownership and accountability for each service
  - Standardized processes are used to maintain the catalog, adding new services and retiring existing services in a consistent method

## Level of Effort

\$0-1 Million
\$1-5 Million
\$5+ Million

- Service Owners
- Service Planning and Management

## Potential Approach

- **Standardize service delivery processes**
  - Establish accountability and ownership for each service
  - Implement tools that can capture orders and automate where possible
- **Maintain a single catalog for enterprise services**
  - Group services based on how customers use them, not the technology components, and include comprehensive service descriptions
- **Formalize how the catalog is managed**
  - Implement processes to introduce, maintain, and retire services

## Recommended Prioritization



### Immediate

April '16 – July '16

- Define catalog structure and list of future services **(complete)**
- Define individual details for each service in catalog **(complete)**
- Define processes to maintain catalog
- Update current catalog listing of existing services



### Short-Term

July '16 – July '17

- Begin rolling out new services based on when prerequisites can be met



### Long-Term

July '17 and Beyond

- Continue to maintain services in the catalog, introducing and retiring services according to the defined processes (ongoing)

# C.4 Customer Engagement

## Desired Future State

- **Agencies see DoIT as trusted service provider**
  - Deeper level of engagement between DoIT and agencies
  - Better understanding of services offered
  - Clear support channels and escalation paths
- **Service and service levels align with service needs**
  - Faster response times and better services
  - Firmer connection between service costs and service delivery
  - Clear mechanisms to receive agency feedback
  - Clarity on service delivery expectations

## Potential Approach

- **Deeper engagement with agencies**
  - Expand the role of the agency relationship manager to encompass business relationship responsibilities
  - Formalize and document roles and responsibilities
- **Customer driven services**
  - Use proactive mechanisms, such as surveys, to gather information, requirements, and engage the agencies
  - Utilize dedicated personnel to support agencies in order to put customers at the heart of the decision making process
  - Gather monthly and quarterly feedback so customers can influence and shape the services they receive

## Level of Effort

\$0-1 Million   \$1-5 Million   \$5+ Million

- Governance Lead
- Communications Coordinator
- Training Lead
- DoIT Agency Relations
- Agency Representatives

## Recommended Prioritization



### Immediate

April '16 – July '16

- Define 'Customer Engagement' roles
- Define 'rules of engagement' with the agencies (demand intake / management, communication plans, surveys, notifications, etc.)
- Define relationship channels and decision rights



### Short-Term

July '16 – July '17

- Begin collecting survey data / operational measurements and distributing communications according to communications plan
- Define end user training needs
- Establish service boards and other governance mechanisms



### Long-Term

July '17 and Beyond

- Continue to refine services based on feedback via service improvement plans
- Continue to administer training

Section 2:

Current State Baseline

# Perspectives from the State

To gather a comprehensive understanding of IT at the state, input was sought out from a broad range of sources.

## ...from the Agencies

### By Size (headcount/revenue)

- Large agencies
- Medium agencies
- Small agencies

### By Status

- Fully Consolidated Agencies
- Managed / Supported Agencies
- Independent Agencies

### By Location

- Springfield
- Chicago

### By Level of Support Provided

- Service Desk Support
- Application / Technical Support
- Fulfillment Services

## ...from Central Services

- Infrastructure Operations
- Network Operations
- Central Service Desk
- Agency Relations

## ...from the C-Suite

- Chief Technology
- Chief Information Security
- Chief Enterprise Infrastructure
- Chief Network Operations
- Chief Strategic Projects

## Voices

### Discussion Topics

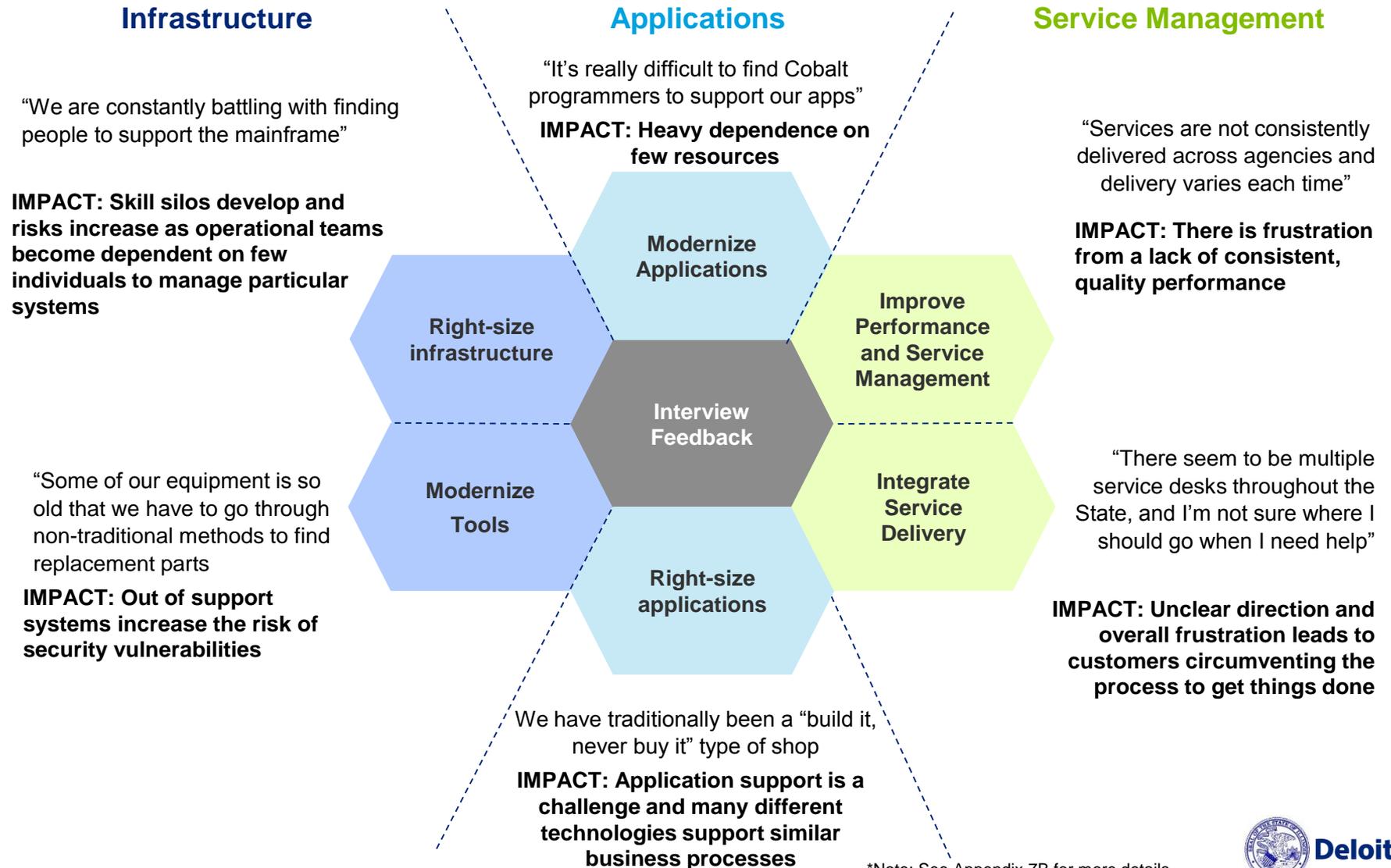
- A day in the life of operations
- Business dependencies
- How roles, organizations, and work will evolve over time
- Ideal end user experiences
- Partnership in delivering services
- Perceptions/attitudes

### Outcomes

- Business and customer perception
- Evolution of changing user and business requirements
- Service and technology gaps
- Pain points / challenges
- Tactical areas for improvement

# What We Heard

A representative mix of key stakeholders across agencies were interviewed to capture current perceptions and obtain feedback around how services are performing.

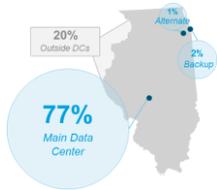


\*Note: See Appendix 7B for more details

# By the Numbers

To establish a foundation for the future state recommendations, key data was collected, reviewed and analyzed as part of the current state analysis

## Most inventoried items reside in the data center



**~80%** of inventoried servers are located in 3 data centers

**60%** of servers are virtual in the data center

## Satisfaction ratings have room for improvement



**16%**

Service Desk callers were either dissatisfied or very dissatisfied

**70%**

Service Desk callers were either satisfied or very satisfied

## Other Infrastructure Areas

- ~21 IT FTEs for every End User Computing Staff (vs 9.4 benchmark)
- The State does not have comprehensive participation in disaster recovery planning that covers both mainframes and mid-range
- 87% of the Laptops/Desktops were installed between 2012 and 2014
- 12 Tier 1 Racks exist across 3 arrays provide an estimated 4PB of storage

## Other Service Delivery Areas



**131k**

Help Desk Tickets in 2015



**31%**

PW reset related tickets



**42**

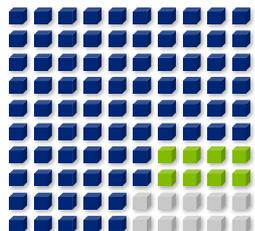
Services Provided in Catalog



**14%**

Calls to service desk abandoned

## Applications are primarily custom built



**82%** Custom

**8%** COTS

**10%** Unknown

## Other Application Areas

- ~45% of applications are in Visual Basic and use an Access reporting tool
- ~2000 custom apps, mostly around Finance and Information Management
- ~75% of agencies have 10% or less of their application portfolio as COTS
- ~39% of all identified COTS applications are owned by 10% of the agencies

# Key Observation Summary

A number of technology themes emerged through data gathering and individual agency interviews

## Key Observations



A lack of infrastructure / enterprise architecture standards has resulted in a proliferation of different designs and solutions that must be maintained



Most technology refreshes are done in large batches based mainly on available funding which sets up potentially large future spikes in technology needs



Disaster recovery is not in place for many business critical applications because the service is provided today as optional (not bundled) and has an associated additional chargeback



Infrastructure services (servers, storage, etc.) are delivered by siloed teams rather than as a comprehensive solution which causes delays in deployments



The technology teams have over 100 projects which may result in churn on several projects rather than progress on the high priority projects



A build first strategy has resulted in a large application footprint to support common business capabilities, many supporting small user populations or built on non-enterprise platforms (ex: Access)



Application support teams are distributed among the agencies, resulting in isolated pockets of knowledge and narrow 'agency specific' data



A significant portion of critical applications are built on legacy platforms, hindering the use of current technologies without a conversion



A lack of a standard development methodology used across all agencies leading to inconsistent delivery of application capabilities



There is a lack of overall service management process standardization across the State, leading to inconsistent service delivery, and a lack of common service management tools and technology to accurately track and successfully deliver services



The lack of a consolidated organization has resulted in "shoulder tapping" and users informally contacting their "expert" staff member for requests or incidents which has created imbalances in workload among staff



There are no standard measurements of service delivery which make it challenging for management to understand the quality and quantity of the services delivered

# Section 3: Strategic Vision

# Strategic Objectives

The following strategic objectives were derived based on working group meetings and should be used to prioritize work efforts



**Consider Agencies**

- Focus on the agencies where agency requirements drive the technical solutions, not the other way around



**Think State-wide**

- Implement technology solutions that are holistic and can be broadly adopted and utilized across the state



**Common over Custom**

- Utilize common / commercial applications and reduce the reliance on non-standard custom applications



**Data is an Asset**

- Data is a statewide asset – where possible, utilize data across agencies to deliver better and faster services



**Data Security**

- Data should not be compromised – where possible, eliminate vulnerabilities and protect customer information



**Use Standards**

- Utilize standards wherever they exist and implement new standards where necessary



**Customer Centric**

- Implement solutions that are easy to use and do not require extensive training for the customers



**Quality Operations**

- Put measures in place to maintain state operations and minimize system interruptions



**Simple over Complex**

- Simplify and standardize operations where possible

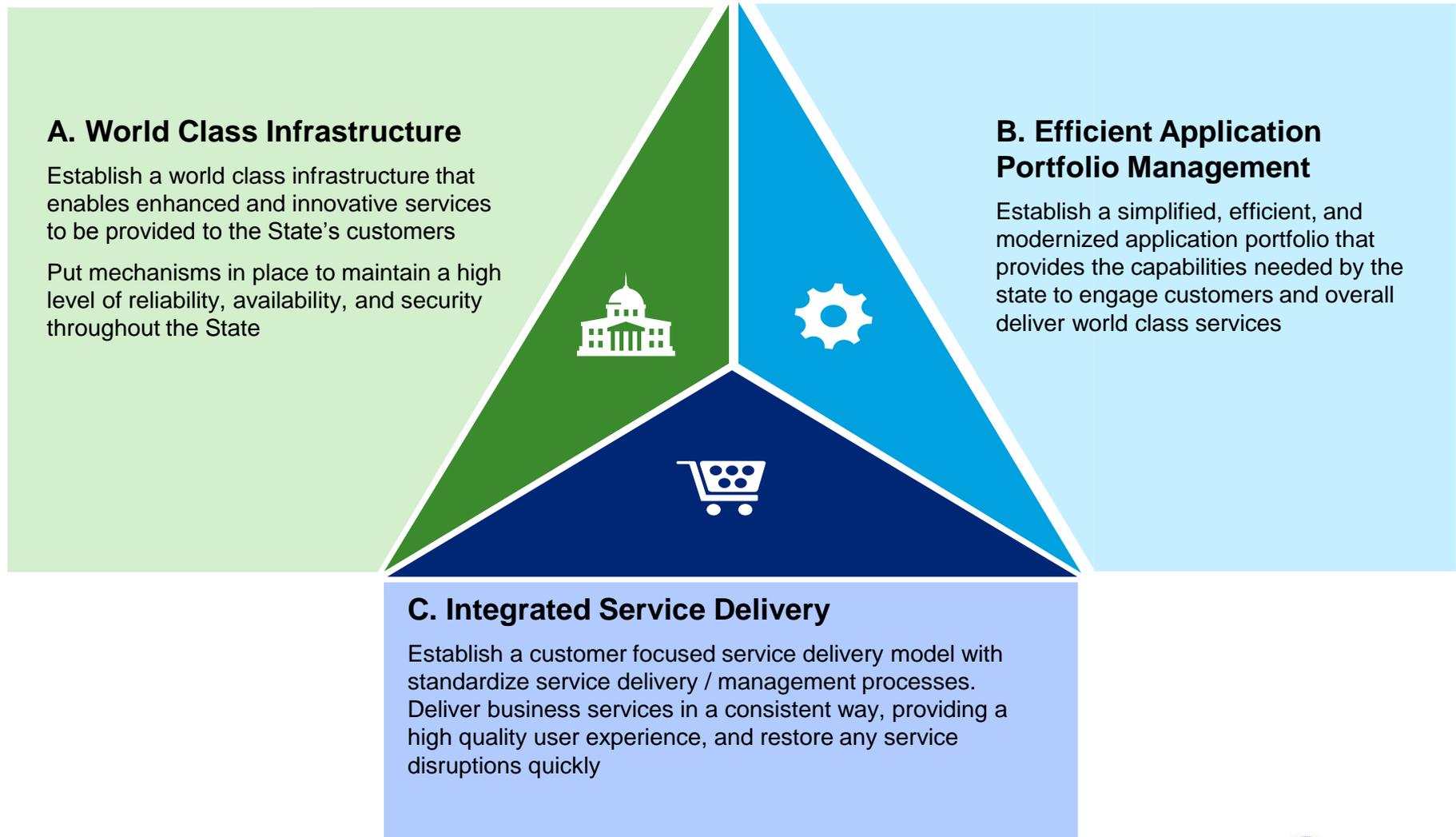


**Reusable Design**

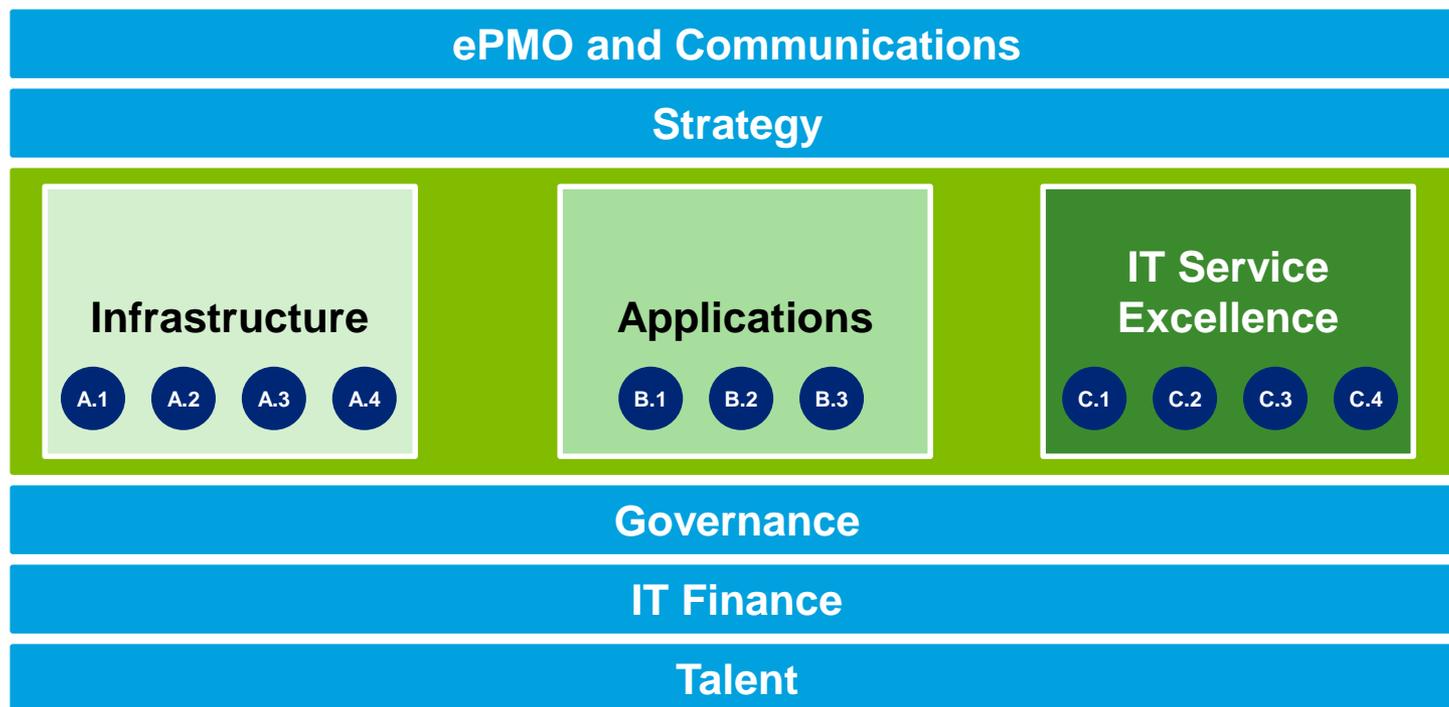
- Design solutions for reuse, both within and without state boundaries (Create once, use many times)

# Enabling Components

The overall strategic vision will be anchored on three primary components



# IT Transformation Framework Alignment



**A.1 Infrastructure Consolidation**

**A.2 Infrastructure Modernization**

**A.3 Disaster Backup and Recovery**

**A.4 Cloud First**

**B.1 Application Rationalization**

**B.2 Application Modernization**

**B.3 Digital Innovation**

**C.1 Service Desk Integration**

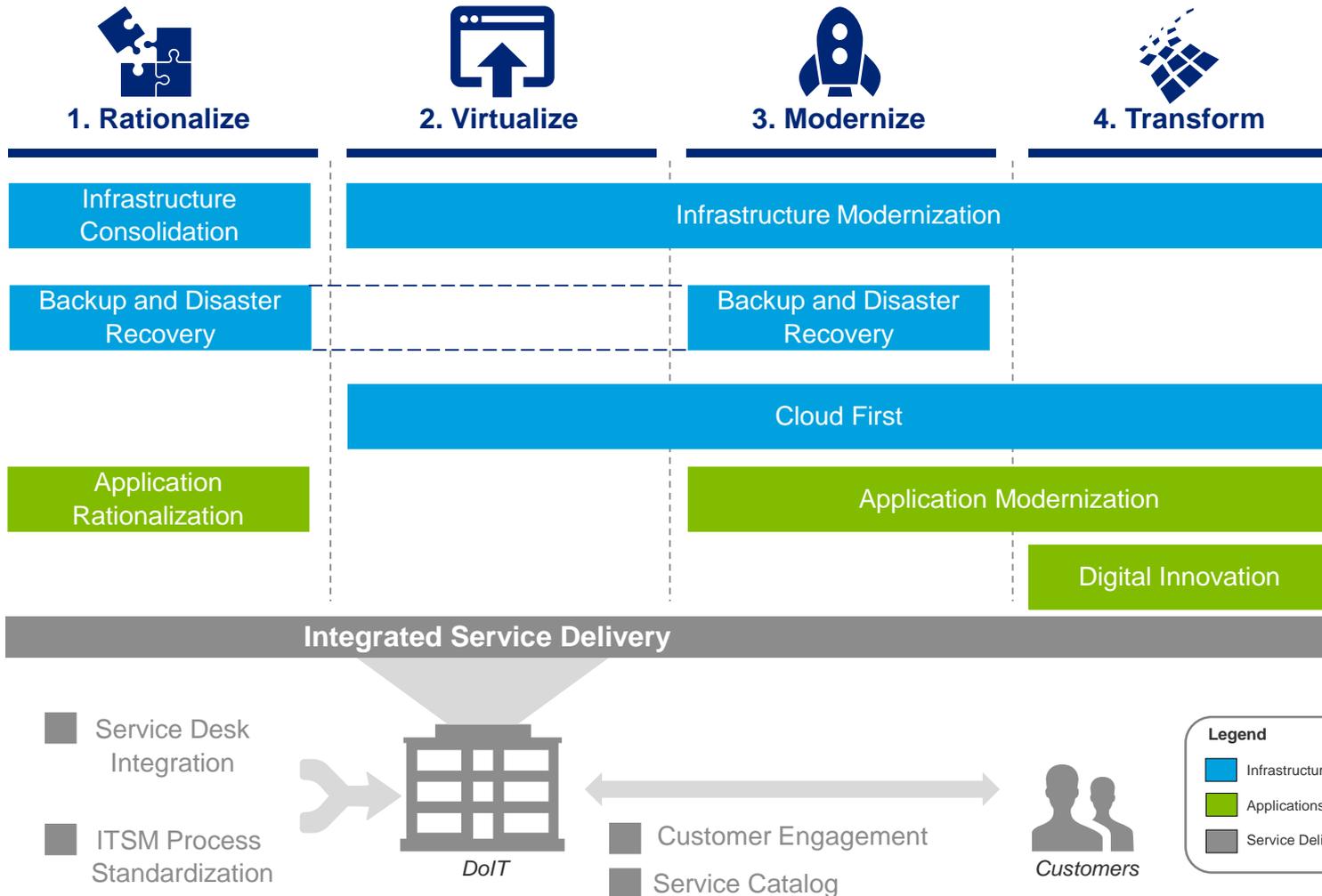
**C.2 ITSM Process Standardization**

**C.3 Service Catalog Management**

**C.4 Customer Engagement**

# Four Pillars

Infrastructure and application recommendations branch across four main pillars to enable integrated service delivery activities and achieve future state goals





# A. World Class Infrastructure

# World Class Infrastructure Overview

The State's vision is to provide modern, innovative, world class services to its' customers and agencies to enable them meet their business goals efficiently and help serve the state constituents in an effective manner. To deliver world class services, the State needs to build a modern and consolidated infrastructure which will provide a strong foundation for these services.

Below are suggested initiatives which the State should undertake to build and manage the world class infrastructure:

## A.1 Infrastructure Consolidation

Continue the effort to consolidate agency IT infrastructure into the DoIT central data center in a cohesive manner



## A.2 Infrastructure Modernization

Modernize DoIT IT infrastructure to create a more secure and scalable IT infrastructure offering.



## A.3 Backup and Disaster Recovery

Develop robust backup and disaster recovery processes which will enable the State to rapidly adapt and respond to any dynamic changes with limited impact to the business



## A.4 "Cloud First"

Identify initiatives and execute on the roadmap to support the implementation of the Cloud First strategy. Develop an enterprise architecture that supports the cloud strategy and includes updated operating model changes to deliver cloud solutions



## A.1 Infrastructure Consolidation

The State Of Illinois is currently in the process of consolidating agency IT infrastructure into the centrally managed CMS data center. While most of past consolidations used a “Lift & Shift” strategy, the consolidations have delivered varying degrees of success.

To deliver high quality and top of the line services in a consistent and cohesive manner, DoIT will need to employ multiple approaches to consolidate the remaining agencies into the central data center. This future state design will help define the strategy for the remaining consolidation efforts.

# Infrastructure Consolidation Vision

The computing infrastructure environment, including servers, storage, databases, networking and back-up systems, will be consolidated into the centrally managed DoIT data center. This will enable DoIT to deliver all infrastructure services offerings cohesively to all agencies and its customers.

The State has consolidated an estimated 75% of its infrastructure to date and this initiative will plan the consolidation of the remaining infrastructure. IT Infrastructure will be centrally managed and no infrastructure will be retained with the agencies. Security and compliance considerations may alter the amount of consolidation for segmentation and cordoned off with central data will be the goal.

## Objectives:

### Well-planned and standard consolidation plans

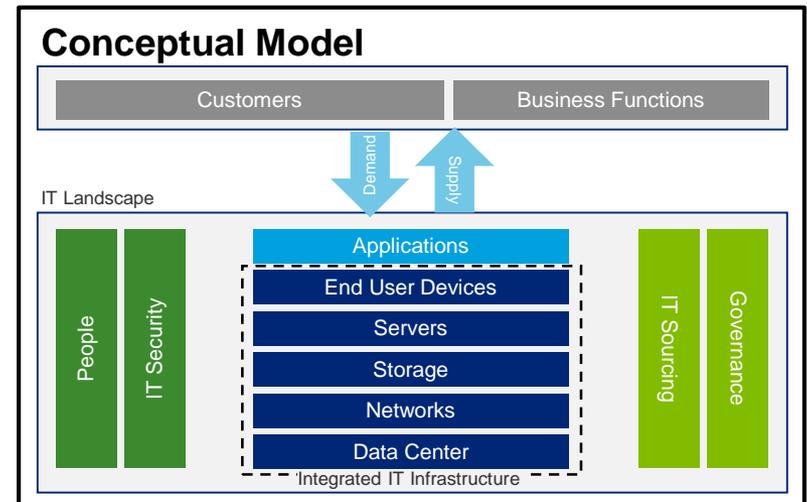
- Instead of the traditional “lift and shift,” plan the consolidation using virtualization and network transfer methods
- Detailed task lists with contingency plans to minimize the time to consolidate

### Consolidate and remediate non-standard infrastructure

- Develop creative and flexible solutions for consolidating one off systems
- Re-platform and consolidate at the source agency when possible

### Consolidate agencies in a phased manner

- Use learnings from earlier consolidations to improve consolidations in the future



## Outcomes:

### Consolidated and Highly Efficient IT Infrastructure

- All agency systems consolidated within the DoIT data center including all servers, storage, network, security and database infrastructure
- Standards for infrastructure with consistent and efficient provisioning processes
- Reduced risk through the management and oversight of all DoIT IT assets within one centralized location

### Uniform user experience

- Uniform experience for users for all infrastructure services irrespective of agency
- A single team and standardized processes for requesting new or modified infrastructure services

# Key Focus Areas – Recommendations

## People



- Agency knowledge capital of the current infrastructure configurations will be required to manage a smooth transition to the future state data center to minimize disruptions in services
- Staff of the future state consolidated data center will be trained to manage and monitor all central and agency infrastructure

## Process



- Standard processes for availability management, capacity management, security, access management will be required
- Consolidation team will follow a standard process, including a detailed checklist of activities to migrate an agency to the central data center
- Processes for managing the utilization and capacity of infrastructure will be established

## Technology



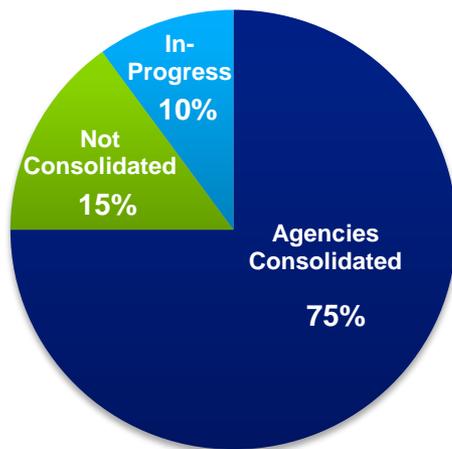
- Server, storage, network and database environments will utilize state of the art technologies to maximize the efficient use of resources while providing the processing required to meet the end-users expectations
- Infrastructure architecture will be flexible to introduce changes in technology as future capabilities are developed
- Automated tools will be utilized to monitor the environment and proactively identify potential problem areas before incidents occur

# Assessment Of Agency Consolidation Progress

The assessment of infrastructure at the agencies will determine the overall scope

## Consolidation Status

### Progress Status



■ Agencies Consolidated ■ Not Consolidated ■ In-Progress

### Details

- The State started consolidating agency IT infrastructure many years ago to this point have made significant progress
- It is estimated that 75%\* of agency infrastructure is consolidated into the DoIT data center, however a detailed inventory is required
- Planning is underway to inventory the exact amount of infrastructure remaining within the agencies
- Once consolidated, all infrastructure will be centrally managed by DoIT, reducing the risk of systems experiencing unplanned outages due to insufficient resources such as power and cooling
- The Public Safety clusters may need to remain separately managed for compliance reasons, but consolidated in the data center.
- IEMA is a federally funded data center and may remain separate

\*Based on working group team's initial estimate as of 04/15/2016

## Lessons Learned from Previous Agency Consolidations

- Previous efforts to consolidate agency infrastructure were cumbersome because of the lack of standard infrastructure and application platforms in the agencies
- Dependencies with the Application Modernization program that will make Infrastructure Consolidation easier to execute
- There may need to be cases where small amount of infrastructure stays in the agencies because the cost to migrate an application exceeds the benefit of the consolidated environment

# Define Consolidation Options

Previously, the lift and shift approach was used to consolidate infrastructure. In the future, lift and shift will only be used as a last option

Below are some of additional options which need to be considered for consolidation:

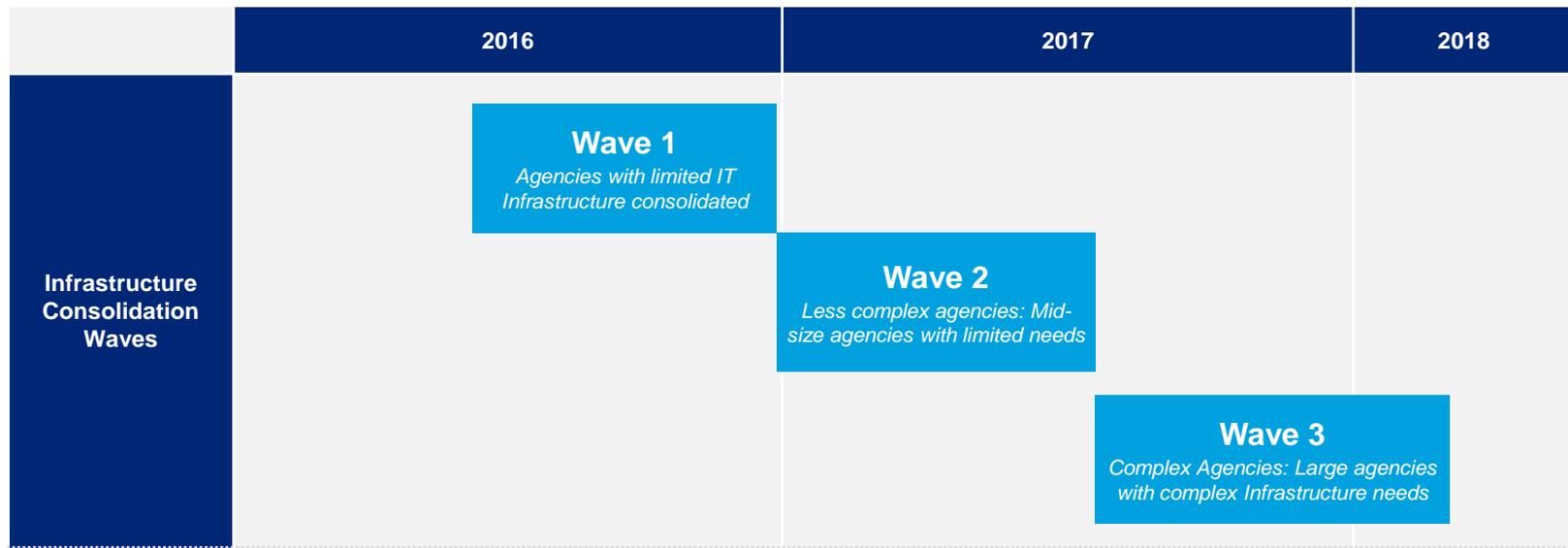
	<b>Lift &amp; Shift</b> Pick up and move physical servers	<b>Image Copy</b> Transfer virtual images to new virtual infrastructure	<b>P2V Migration</b> Take disk image copy from physical server to virtualized infrastructure	<b>Rebuild</b> Build new servers, install and reconfigure applications
<b>Cost</b>	Major effort spent replicating the current physical environment – data of negligible value post migration	Image copy takes the least time to plan and execute	Infrastructure changes require effort to retest	Rebuild typically refreshes all infrastructure elements onto new hardware and OS – significant retesting
<b>Time and skills to plan and execute migration</b>	Negligible changes made	Minor changes made as image hosted on new platform	Infrastructure virtualization SME	Rebuild typically changes all infrastructure elements
<b>Risk of unplanned outage</b>	Migration approach cannot be tested, so risk of outage is high	Typical image migration, requires production outage to test. This limits testing achievable, so increases risk	Virtualization technologies typically provide facility to isolate a server image when being brought up, increasing opportunity for old and new production to be available in parallel	Old and new production systems are available in parallel
<b>Service life / Operational Cost Reduction</b>	Negligible impact	Opportunity to host on newer hardware and to force standardization	Extend service life and reduced costs. Leverages virtualization so existing OS on refreshed hardware	Opportunity to refresh OS and hardware; maximizing service life and minimizing operational cost.

# Plan Waves for Consolidation

Based on the assessment and migration approaches defined, develop a detailed roadmap with multiple “consolidation waves” for agencies

## The steps to the consolidation waves are:

- Determine the consolidation focus areas (i.e. clustered agencies with similar technology)
- Assess the current agency infrastructure consolidation status (In progress)
- Define infrastructure consolidation waves
- Execute the wave migrations:
  - Wave 1
  - Wave 2
  - Wave 3



# Network Communications

The State should consolidate and standardize network communications and move to a unified communications delivery model. The move will reduce telecommunications cost, simplify complex network operations, and provide business enabling technologies across the agencies

Today	Recommendation
<ul style="list-style-type: none"><li>• The State has a consolidated network, and an initiative underway to move communications to VoIP</li><li>• The existing VoIP initiative has lost momentum as agencies have been slow to convert and a lack of funding</li><li>• Many of the agencies that have converted to VOIP have concerns over the quality, causing them to not fully adopt the solution</li></ul>	<ul style="list-style-type: none"><li>• Devote resources focused on regaining momentum with the current VoIP initiative</li><li>• Develop a plan and execute transition activities over the next 6-12 months to reduce the number of traditional voice lines and increase the adoption of VoIP</li><li>• Address quality concerns through problem resolution</li><li>• Expand network communications</li></ul>

## Immediate Next Steps

- Establish Network Program Owner, Network Advisory Board, and dedicated central implementation team
- Select focused agency resources to identify additional agency locations that are ready to migrate to VoIP based on existing WAN and LAN readiness and build out a timeline
- Develop an approach to grouping sites into implementation waves and begin migrating VoIP-ready agencies

# Recommendations and Plan

**Objective:** Consolidate the State of Illinois Agency IT infrastructure into the current centralized DoIT data center and deliver world class infrastructure services

## Scope / Activities

- Define IT infrastructure Consolidation Focus Areas
  - Use key business strategies, drivers, and current capabilities to define IT infrastructure consolidation focus areas
- Assess Current Agency Infrastructure Status
  - Develop IT infrastructure inventory and current state of agency for consolidation
  - Infrastructure inventory can be divided into multiple components such as – Compute, End User Computing, Networking, and Security
- Define Infrastructure Consolidation Waves
  - Develop a wave strategy for infrastructure consolidation per component
- Consolidate Utilizing Playbooks
  - Migrate Wave 1 Agencies
  - Migrate Wave 2 Agencies
  - Migrate Wave 3 Agencies

## Benefit Drivers

- A consolidated IT infrastructure will reduce redundancy and will provide the platform to deliver uniform services to constituents and agencies
- Lower operational costs through a reduced infrastructure footprint
- Reduced security risk because of the reduction or removal of infrastructure silos
- Consistent experience to end users for their infrastructure needs

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					Jan
Define the IT infrastructure consolidation focus areas Assess current IT infrastructure and agency status Define infrastructure consolidation waves Consolidating Utilizing Playbooks																											

## A.2 Infrastructure Modernization

Based on the assessment of the current state of IT infrastructure, there are multiple IT assets which may have aging hardware, out of support operating systems that needs to be modernized.

As a part of effort to understand DoIT infrastructure modernization needs, the team should assess the existing IT infrastructure against current DoIT standards and perform a gap analysis to determine infrastructure that requires modernization. Based on that assessment, the team should seek to identify infrastructure modernization drivers and develop a plan for the modernization.

# Infrastructure Modernization Vision

Develop a state of the art technology environment with modernized computing infrastructure to support the State of Illinois applications. The modernized platforms will provide the computing power required to support the State, along with a flexible and scalable architecture to adapt to the changing needs of DoIT and the agencies.

All IT assets will be operating on up-to-date infrastructure that meets DoIT standards for hardware and operating systems. As new technologies are available and updates from vendors are developed, DoIT will evaluate the infrastructure standards to determine if the changes will be made across the enterprise.

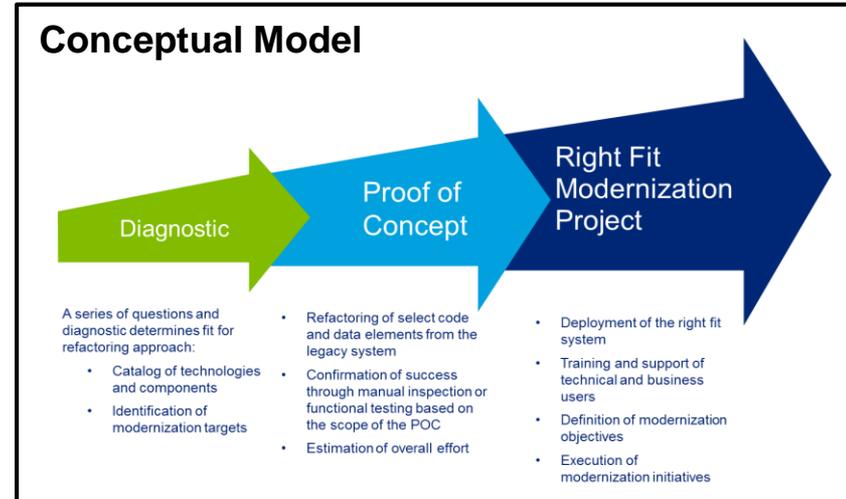
## Objectives:

### Understand Scope and Drivers for Modernization

- Build current IT standards and perform a gap analysis to understand the scope of modernization
- Understand drivers for modernization (e.g. outdated operating systems)

### Develop a Plan for Modernization

- Prioritize modernization drivers and develop waves for modernization
- Develop a plan based on modernization drivers prioritization
- Modernize infrastructure elements based on the plan



## Outcomes:

### Modernized and more Secure IT infrastructure

- The current DoIT infrastructure- compute, storage, network and security with a modern architecture and current supported platforms and operating systems
- Infrastructure built on leading edge technology platforms that are scalable, flexible and adaptable to enable innovative services for customers
- Reduce infrastructure costs

### Architecture Standard that Supports Modernization

- Scalable and flexible architecture to adapt to State agency and administration needs
- As new technologies are available, DoIT will evaluate infrastructure standards to determine if changes will be made across enterprise

# Key Focus Areas – Recommendations

## People



- Train the infrastructure team on IT modernization principles and the supporting architecture goals and objectives
- Organize infrastructure engineering, administration and support teams to focus on specific components of the infrastructure that needs modernization to achieve successes along the program

## Process



- Establish processes for integrating the future state architecture designs
- Publish and maintain infrastructure standards and communicate these to the teams to ensure alignment
- Identify scope areas (i.e. Servers with Microsoft 2003 operating systems that are past end of life without vendor support and a major security risk to the State) and develop a plan for modernization

## Technology



- Promote IT infrastructure technologies that support future infrastructure standards and capabilities
- Identify servers, storage, network and security infrastructure that are not supported or do not meet the DoIT standards
- Formulate waves of migration of infrastructure to modernize components
- Use virtualization as a key leverage point for modernization and as an ongoing strategy to keep the State's infrastructure up to date
- Continue to stay current on technologies to determine if standards need updating as technology advances are introduced



# Driving Modernization through Virtualization

As systems are modernized, DoIT should use virtualization as a key leverage point.

## Objectives:

### Drive modernization through virtualization efforts

- Continue with ongoing virtualization effort while accelerating the pace to aim to close virtualization gaps for remaining infrastructure
- Evaluate and invest in processes, tools and talent to accelerate virtualization effort

## Recommendations:

- Use a virtualization play for modernizing assets and continue to invest in virtualization effort
- Train system administrators and support staff on newer systems management and systems configuration tools to support virtualized platforms.
- Streamline processes to support and provision a single virtualized platform
- Put in place additional processes/checks to manage any data segregation requirements
- Adjust service levels for infrastructure provisioning services as speed of delivery improves

## Outcomes:

### Scalable, high-performing, efficient Compute

- Maximized resource compute utilization through a virtualized architecture
- A highly scalable, available and easier to manage IT infrastructure

### Rapid provisioning to meet end user needs

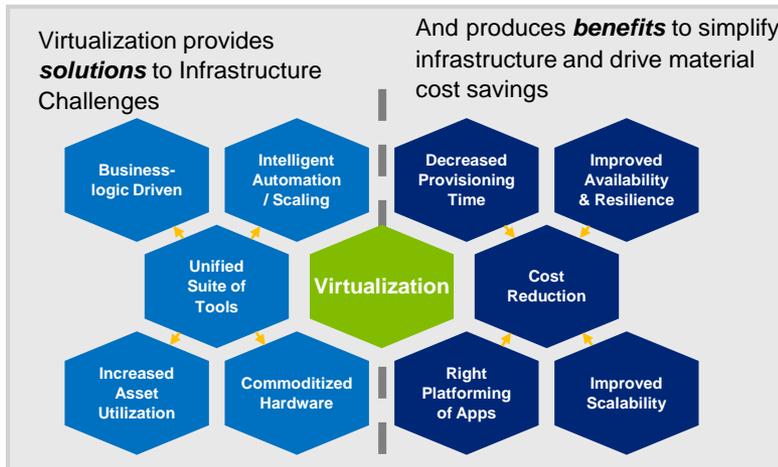
- Reduced time to setup new hosting services and more consistent service delivery

### Improved resiliency

- Faster and more complete recovery from disruptions in service

### Easier entry to cloud computing

- A smooth transition to public and private cloud options



# Ongoing Virtualization Program

In addition to driving modernization through virtualization, the State should increase investments in virtualized infrastructure to keep the State's infrastructure up to date

## Current State

- More than 60% of servers have been virtualized and more servers are planned in the program

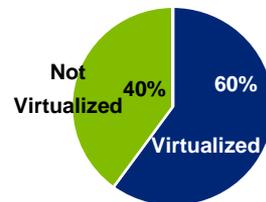
## Make virtualization part of the ongoing delivery strategy

- Plan for future capabilities such as software defined data centers to provide the flexibility, resiliency and redundancy to meet the future needs of the State

## Future State Objectives

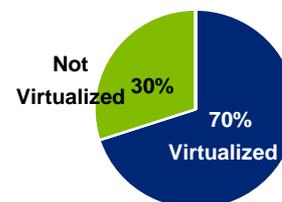
### Current

- Current Status ~ 60% virtualized



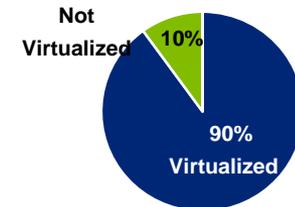
### 2016

- Strive for 70% virtualization by the end of 2016

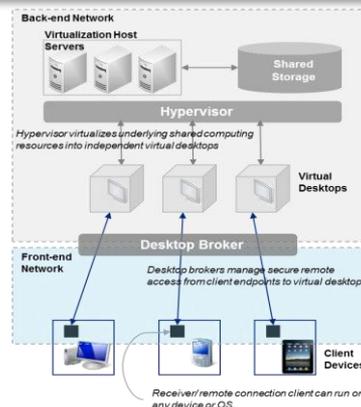


### 2017

- Goal of 90% virtualization by the end of 2017



## New Opportunities



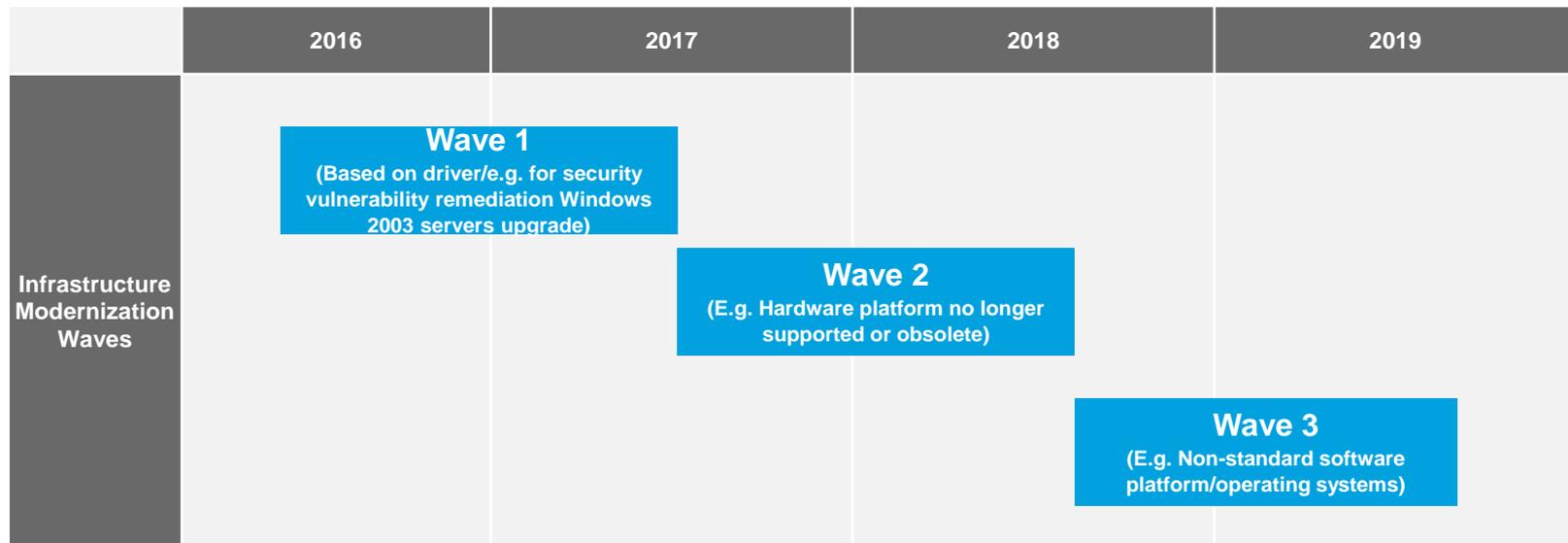
- Desktop virtualization – Evaluate virtual desktop as an option for the staff to reduce the costs of desktop management
- Evaluate technologies such as software defined data centers and networking to expand virtualization beyond compute processing

# Modernization Roadmap

Technology platforms will be put into multiple waves of modernization based on the results of a gap analysis

The steps to the consolidation waves are:

- Assess the current IT infrastructure standards
- Establish future IT infrastructure standards
- Perform gap analysis of infrastructure against standards to determine the scope of systems requiring modernizations
- Execute implementation waves against the plan



# Recommendations and Plan

**Objective:** Modernizing the State of Illinois agency IT infrastructure will help deliver world class infrastructure services to end customers and agencies, which will reduce redundancy and any technical debt

## Scope / Activities

- Assess the current IT infrastructure standards
  - Gather inventory of current IT infrastructure standards
  - Gather details of current IT infrastructure elements
    - Servers, storage, network, security systems (e.g., operating systems)
- Establish future IT infrastructure standards
  - Develop infrastructure standards based on business drivers
  - Develop future delivery model
- Conduct Gap analysis and recommendations
  - Perform gap analysis by comparing existing standards against future standards
  - Rank modernization drivers and accordingly understand the scope of modernization.
  - Develop modernization plan
- Execute against the plan
  - Execute as per modernization waves

## Benefit Drivers

- Create a more agile and current infrastructure reducing the maintenance and operational costs
- A modernized infrastructure will reduce the security risk and vulnerability exposure
- A more nimble architecture will create an environment that is easier introduce new technologies as they become standard
- Modernized infrastructure creates platforms to support newer technologies such as Mobility, Business Intelligence and the Internet of Things

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					Jan
Assess current IT infrastructure standards																											
Establish future IT infrastructure standards																											
Gap analysis and recommendations (Roadmap)																											
Execute against the roadmap																											

## A.3 Backup And Disaster Recovery

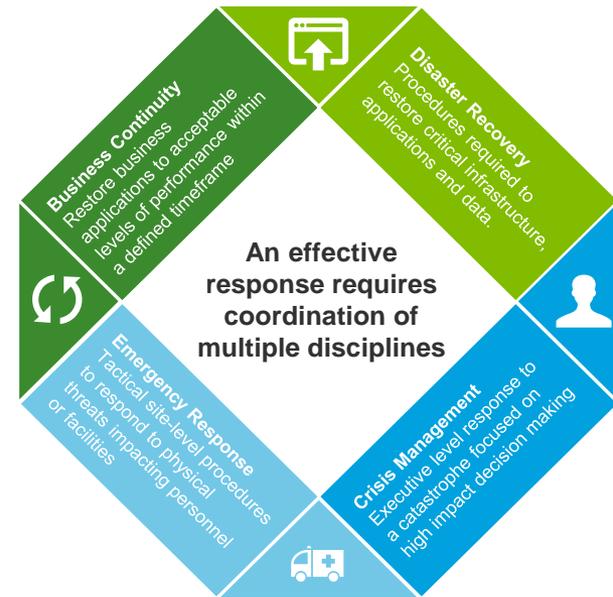
Until now, the State has offered disaster recovery services to agencies at an additional cost in the service catalog. This created a situation where many agencies chose not to implement disaster recovery solutions because of the additional cost. They did not fully understand the risks, or they assumed IT would take care of the problem in case of a disaster.

In the future, DoIT will require applications to have Disaster Recover capabilities and the cost will be bundled with application development and support. This will protect the State from having applications that need recovery and not having the technology in place to support the recovery requirements.

# Backup and Disaster Recovery Vision

Develop and enforce backup policies through automated backup technologies and processes and monitor the environment to make sure all systems have the necessary recovery capabilities.

Develop a comprehensive disaster recovery solution which will enable the State to rapidly adapt and respond to internal or external dynamic changes – opportunities, demands, disruptions, or threats – and continue operations limiting the expected recovery time objectives (RTO) and recovery point objectives (RPO).



## Objectives:

### Develop DR strategy in tune with business recovery needs

- Understand business recovery needs and develop technical recovery processes for the DR strategy

### Introduce or update processes to accommodate DR strategy

- Introduce standardized IT processes and update the existing DR plan to accommodate the updated strategy
- Once disaster recovery process is in place, perform timely testing

### Update backup procedures and plan for added capacity

- Create updated backup procedures for newly consolidated agencies and confirm capacity of backup systems meets the new requirements

## Outcomes:

### Comprehensive Disaster Recovery Process

- A comprehensive disaster recovery process which will enable the State to rapidly adapt and respond to declared disasters and continue operations with planned impacts to technology systems
- A well established and structured protocol for managing and communicating a disaster

### Updated Backup and Restore Process

- Updated backup and restore processes to support recovery processes
- Planned and executed alignment with Statewide and Federal policies for backup
- Capacity planning for future growth
- Staff trained on recovery processes

# Key Focus Areas – Recommendations

## People



- Train DoIT resources and agencies on the disaster recovery plan
- Ensure strong emphasis on communication for Business Continuity and Disaster Recovery throughout all aspects of the organization
- Engage DoIT staff and executives who have a clearly defined roles in escalation, activation and oversight of the backup and recovery processes

## Process



- Align security policies with backup procedures
- Define RTOs and RPOs at the application level, not the enterprise level as individual business applications define needs for an application recovery and a solution is designed to meet the majority of business process needs
- Prioritize applications into tiers to enable the agencies and DoIT to focus resources required for recovery
- Define Backup and Recovery processes to develop and maintain Backup and Recovery plans
- Define Disaster Recovery plans and test the plans regularly

## Technology



- Implement backup technologies to support the policies and procedures with expanded capacity to meet the consolidated agencies
- Expand the capacity of the Disaster Recovery solution to meet the needs of applications that require the services in the future
- Perform timely tests to ensure backups are working as planned
- Test Disaster Recovery using table top testing to validate RTOs can be achieved

# Backup and Disaster Recovery Strategy

The standard disaster recovery service categories can be assigned to assigning applications with the proper contingency plan and recovery timing to meet each application need

Disaster Recovery Replication Recommendations				
Tier	Category	RPO	RTO	Benefits / Comments
0	High-availability (HA)	-	Near Zero	Highly resilient infrastructure architecture consisting of online production servers in multiple datacenters
1	Critical	15 minute	1 hour	High priority recovery with minimal data loss for business critical systems
2	Essential	4 hours	4 hours	Balances data loss and time to recover to meet advanced business requirements
3	Standard	12 hours	24 hours	Possible reduced performance for applications relative to normal operations but meets business requirements
4	Nonessential	~24 hours	Best Effort	Historical backup where servers and data are restored manually on a best-effort, and resource-available basis

## Backup Recommendations

### Current Capabilities:

- Data Retention Schedule: 60 days for production data, 14 days for Dev/Test data (according to policy)
- Backup tools and schema:
  - Mid-range Servers
    - Tivoli Storage Manager – 1st Full Backup and daily incremental backup
    - EMC Avamar – Data domain replication
    - Isilon – Snapshots retained for 60 days
- Capacity: ~70-75% utilized

### Recommended Changes:

- Continue with current backup strategy and add system level backups
- Evaluate the need to update backup capacity to accommodate additional backups resulting from the agency infrastructure consolidation effort

# Recommendations and Plan

**Objective:** Develop a Backup and Disaster Recovery program designed to recover DoIT systems and applications which support agencies and DoIT requirements in case of a disaster

## Scope / Activities

- Analyze Business Impact
  - Assess the current agency application inventory
  - Determine which applications will require DR
- Develop Backup and DR Plans
  - Update Backup plans to include the new applications
  - Implement policies to make DR required for all new applications
- Implement Technology Updates
  - Expand the Backup and Recovery technology to support the updated requirements
  - Expand the DR capabilities across the additional applications
- Perform Backup and DR Tests
  - Conduct Backup testing
  - Conduct table top DR testing
  - Understand any gaps and update technology to close gaps
  - Monitor Backup and Recovery processes

## Benefit Drivers

- Recovery of systems to meet RTOs and RPOs with reduced unplanned down time
- The Backup and DR processes establish structured protocols for managing and communicating in a disaster
- A well documented Backup and DR strategy decreases the potential severity of a crisis by alleviating confusion among staff involved in a recovery
- Tested recovery solutions train resources on the process and provide identification of gaps in the recovery process

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					Jan
Analyze business impact																											
Develop backup and disaster recovery plans																											
Implement technology updates																											
Perform backup and disaster recovery tests																											

## A.4 Cloud First

The State Of Illinois has kick-started a Cloud First strategy and has begun the journey to offer cloud based innovative services to its customers.

Cloud should become an integral part of DoIT's IT offering with a clear plan to deliver on the cloud strategy. DoIT should also develop an enterprise architecture that supports the overall cloud strategy and include the updated operating model changes to realize the benefits of a cloud solution.

# Cloud First Vision

Implement the State’s Cloud First strategy to create options for application development platforms and take advantage of cost savings opportunities and to meet State’s vision to have 70% workload on cloud by 2018 .  
 Create private, public and hybrid cloud options with auto-provisioning features to accelerate application development efforts and reduce operating costs.  
 Identify options for public cloud providers that meet the security requirements of the State. Implement private and hybrid cloud options for systems where an on-site presence is required.  
 Assist DoIT in realizing it’s vision to launch security, Identity and Infrastructure as a service bringing close collaboration between state agencies and businesses

## Objectives:

### Develop a plan and focus on quick wins

- Develop a high level desired end state reference model
- Review current state architectures and application design patterns and identify candidates for cloud computing
- Develop a detailed cloud implementation plan, focusing first on supporting services (backups, storage, test, QA etc.) and other similar areas that offer quick wins

### Integrate Cloud into enterprise architecture standards

- Align Cloud reference model with architecture standards along each of the architecture domains (server, storage, database, security, and network)



## Outcomes:

### Best-in-class IT Services enabled through cloud computing

- Clearer steps to drive the state’s cloud compute initiatives
- A highly agile and nimble cloud environment to accelerate the application development processes
- Cost savings through efficient use of public cloud resources

### Cloud standards integrated into overall IT strategy

- Cloud the de-facto standard for new IT initiatives
- Cloud offerings align with business strategy, business process, and overall IT strategy

# Key Focus Areas – Recommendations

## People



- Communicate the Cloud strategy to the IT team and ensure the offerings are given first consideration for any new infrastructure or application provisioning requests
- Identify a pool of resources who will act as a subject matter experts for Cloud technologies

## Process



- Define and integrate Cloud standards with existing IT infrastructure and application standards
- Develop processes for requesting cloud services, as well as provisioning and de-provisioning compute, storage and database offerings
- Monitor cloud users for usage to make certain only active users are being utilized
- Update the project portfolio management and governance processes to add cloud as a de-facto solution for new provisioning requests

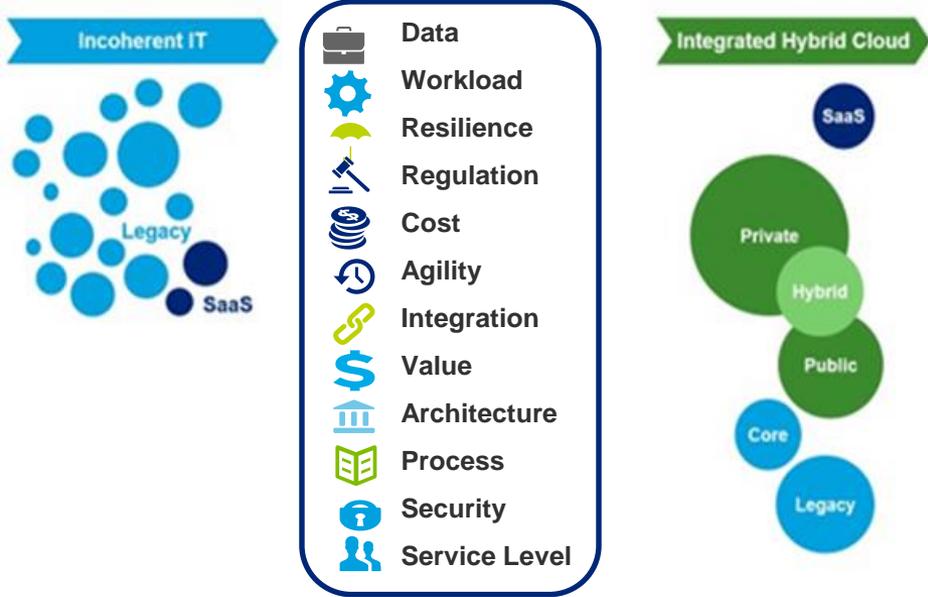
## Technology



- Develop technology options for Public, Private and Hybrid cloud solutions
- Evaluate and engage cloud technologies which can meet demands of users including SaaS, PaaS, and IaaS

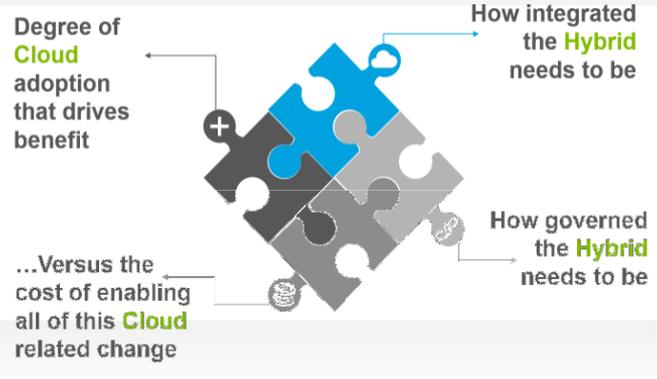
# Transition from the current environment to Cloud

Transitioning to the Cloud requires careful planning and execution to achieve the expected benefits



## Charting a Path to Cloud Adoption

- Start with a deep understanding of applications and data and their key attributes
- Understand the differentiating capabilities of cloud services that may create value for your business and customer
- Map cloud service capabilities to public/private and legacy requirements to understand delivery and service options
- Drive out integration and governance requirements to better understand likely costs and timeline
- Validate the rationale and business case
- Develop a clearly prioritised and pragmatic strategy and roadmap
- Aim to decouple constraints in the plan to build momentum
- Set out to learn and iterate your plan to evolve capabilities



# Recommendations and Plan

**Objective:** Creating a business and technology vision for how cloud solutions can harness benefits and efficiencies for the business definition of a clear plan for implementing the overall cloud strategy

## Scope / Activities

- Assessment
  - Gather inventory of current IT standards and cloud strategy
  - Review current state architectures and application design patterns
- Opportunity Analysis and Future State Definition
  - Define overarching objectives / business drivers for cloud within context of current IT strategy; validate business and IT requirements
  - Perform workload feasibility analysis
  - Review and identify suitable vendors to support workload requirements (offerings, platforms, security, cost)
- Roadmap and Planning
  - Develop multi-year implementation roadmap for cloud adoption
- Execution
  - Execute the projects developed in roadmap

## Benefit Drivers

- Significantly increased flexibility through the reduced time to design, implement, and “go to market” with cloud-based software systems
- Reduction in total costs of software licenses and ongoing maintenance costs, through use of SaaS subscription models rather than on-site licensed software
- Reduced physical infrastructure costs by moving to vendor cloud IaaS.
- Positioning for future cloud architecture disruptions coming in the future

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Assessment																											
Opportunity Analysis and Future State Definition																											
Roadmap and Planning																											
Execution																											



# B. Efficient Application Portfolio Management

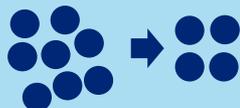
# Efficient Application Portfolio Management Overview

As part of the overall transformation, the State of Illinois has set out to improve the efficiency and effectiveness of IT. In line with this objective, the state should develop a lean and efficient application portfolio, one that provides the capabilities needed by the State while considering aspects such as costs, supportability, and security.

Listed below are suggested initiatives which the state should undertake to build an efficient application portfolio:

## B.1 Application Rationalization

Develop a strategy to improve the existing application portfolio and reduce functionality overlaps, technical limitations, and maintenance costs



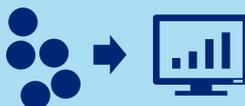
## B.2 Application Modernization

Develop a strategy to get the most value from the existing applications over the short, middle, and long terms



## B.3 Digital Innovation

Create bi-modal IT to deliver constituent centric platforms and tools



## B.1 Application Rationalization

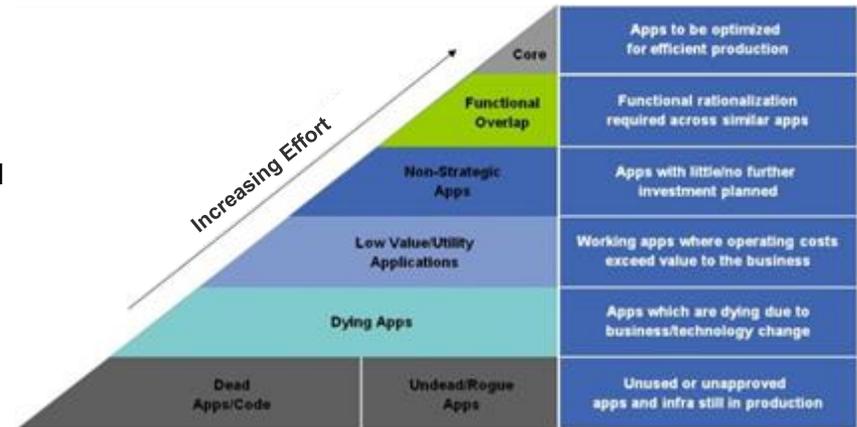
In the current state, applications have predominantly been built in house, and many different technologies support similar business processes. This makes application support a challenge, and has also resulted in difficulty finding resources to support custom applications.

To streamline the applications portfolio, DoIT will “right-size” the number of applications used to deliver the business capabilities. This will optimize or reduce costs required to maintain business capabilities, and modernize specific business functions and technologies.

# Application Rationalization Vision

An Application Portfolio environment will be managed to deliver the current capabilities the State requires. The environment will have an architecture that is flexible to adapt to and quickly develop new enhancements, and to incorporate new technologies as they become standards in software development. The State will promote re-use of code for basic software functions to speed the delivery of new capabilities.

Application Category Matrix



## Objectives:

### Implement enterprise application standards

- Standardize on software development languages
- Implement governance measures

### Find and reduce unnecessary capability overlap

- Re-platform technologies that are no longer supported
- Retain, retire, and rationalize remaining applications

### Implement application architectures and scalable application designs

- Provide development platforms that can develop code quickly
- Implement a code re-use program

## Outcomes:

### Nimble and modern application portfolio

- Fewer applications to support on more flexible / extensible platforms with lower operational costs

### State resources shared across agencies and efficiently used / re-used

- Fewer areas of overlap where separate applications are used for the same business capability
- Increased sharing of application processing between agencies

### Better service alignment with customer expectations

- Better services and service quality for customers through a stable set of enterprise applications
- More consistent customer experience through seamless engagement across agencies

# Key Focus Areas – Recommendations

## People



- Train development teams on object oriented development methodologies to promote code re-use and standardization so software can be shared enterprise-wide
- Organize application development and support teams across agencies so development is “Illinois First” whenever possible
- Form teams with specialties including SAP to support the ERP and Research and Development Incubators to quickly write applications when opportunities arise

## Process



- Define and integrate standard Agile and SDLC development methodologies and use the appropriate methodology based on the goals of the project
- Provide staff across all levels with a consistent understanding of application development and support processes
- Define common measurements of code re-use
- Look for continuous improvement opportunities to continue to rationalize and consolidate

## Technology

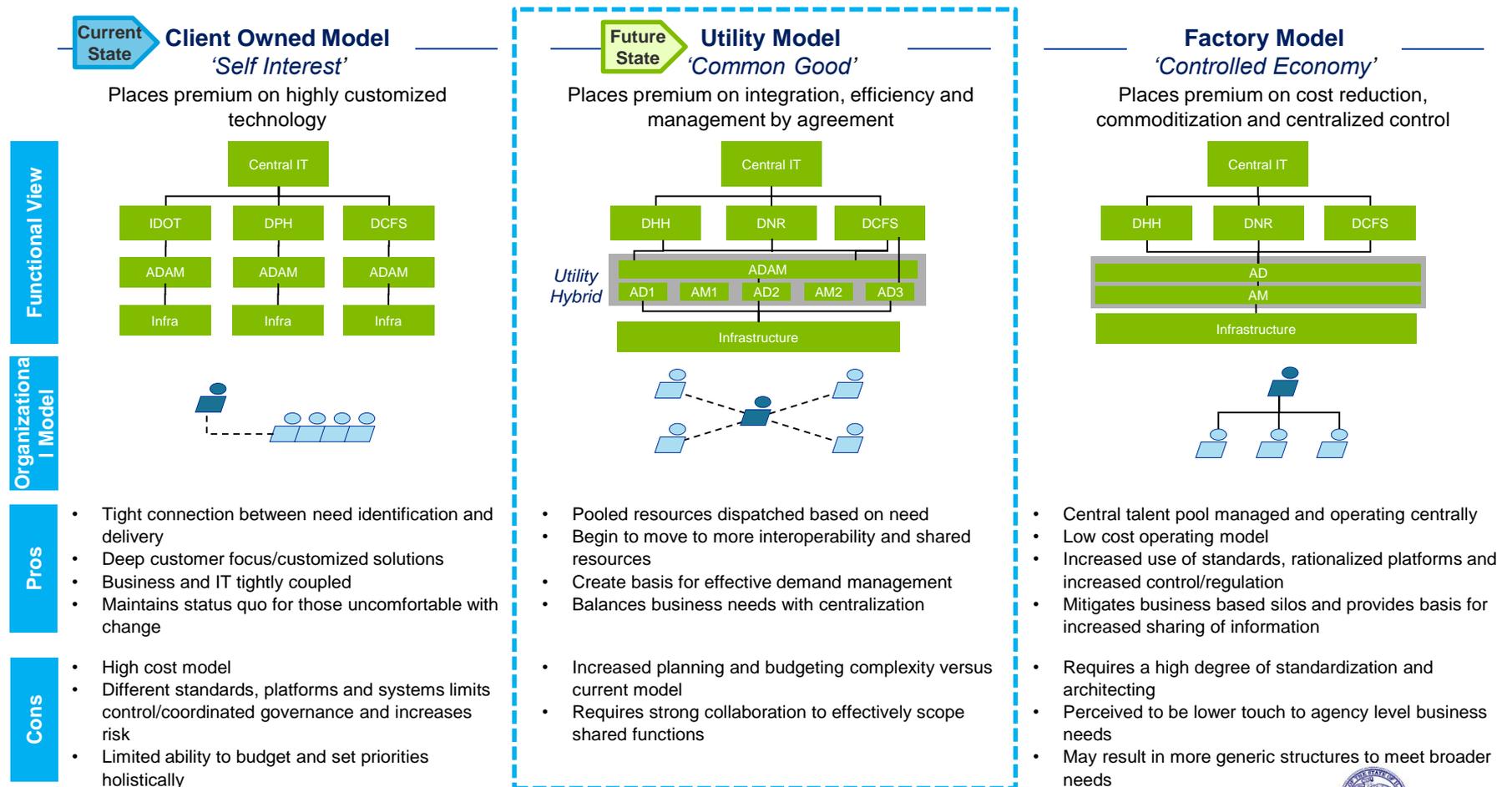


- Standardize on software development languages to promote code re-use and object oriented principles
- Re-platform technologies that are no longer supported, including software languages and operating systems to the current standards
- Promote technologies that support application rationalization standards and capabilities



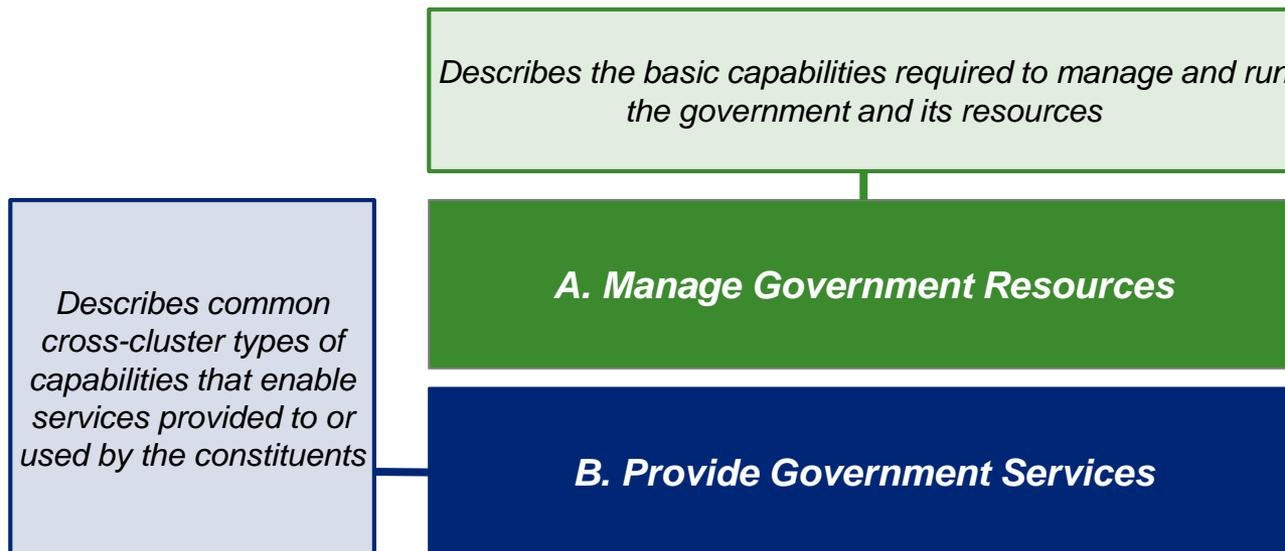
# Operating Model Options – Application Development & Maintenance (ADAM)

The future state proposes use of a “utility model”, with some local service provision but more of a focus on resource sharing and interoperability. As the State standardizes systems, it could begin to move to a factory model to reduce costs further and integrate more applications



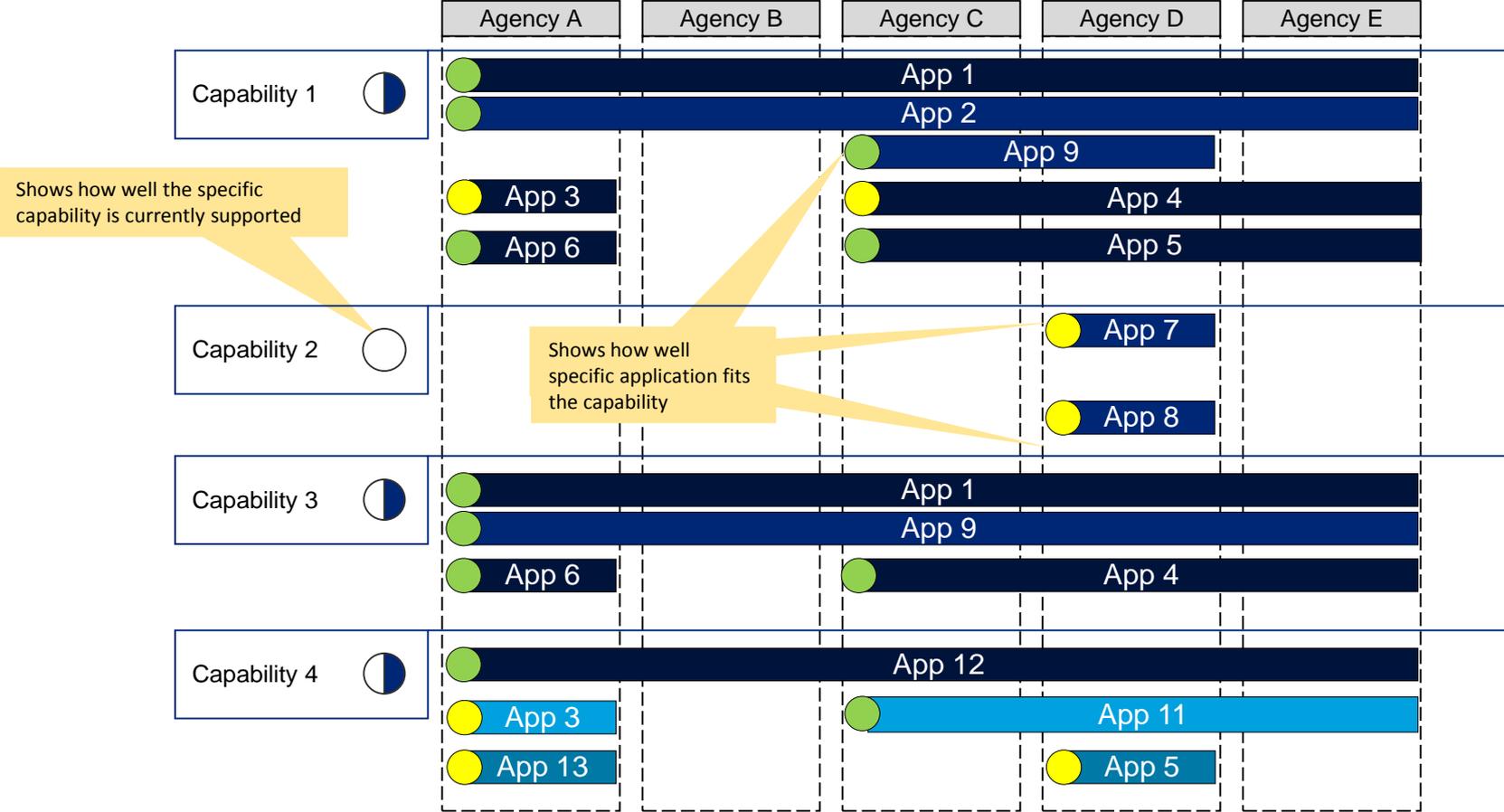
# Application Map: Overview

Through an initial effort, applications have been mapped to business capabilities; however, additional data gathering and validation is still required by the State.



# Roadmap to Rationalization

Mapping applications to capabilities will serve as a validation of possible shared or siloed resources



**System Cluster**

- Cluster 1 (Dark Blue)
- Cluster 2 (Medium Blue)
- Cluster 3 (Light Blue)
- Cluster 4 (Cyan)

**System Capability Fit**

- Good Fit (Green Circle)
- Medium Fit (Yellow Circle)
- Poor Fit (Red Circle)

**Capability Coverage**

- Functionality is mostly supported by IT (Dark Blue Circle)
- Some functionality supported by IT, but rest is manual (White Circle)
- Mostly manual process with minimal systems support (Half Blue Circle)
- (N/A) Not available from IT (Circle with slash)

Legend:

# Recommendations and Plan

**Objective:** Rationalizing applications will reduce the redundancy, increase resource sharing, and reduce the operational maintenance required to support the states application portfolio.

## Scope / Activities

- Define the Application Strategy and Imperatives
  - Use the key business strategies and drivers and the current capabilities to define the applications rationalization areas of focus
- Assess Current Application Portfolio Capabilities
  - Use the application inventory and areas of focus (previous step) to profile applications into the four R's
  - Use application capability mapping to define the guiding principles
- Define Future Application Portfolio
  - Use guiding principles and the application profile to define the future state application portfolio
  - Use the impact assessment and application portfolio to develop the building blocks for application rationalization
- Develop Future State Roadmap
- Conduct Rationalization

## Benefit Drivers

- Simplify effort to develop and maintain applications through:
  - An easy to maintain application portfolio
  - Application standards to promote code re-use
  - Design standards for simplified application processing
- Development methodology standards
- Efficient use of computing resources
- Lower operational costs through a reduced application footprint
- Promotes the integration of application processing between agencies

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					Jan
Define the application strategy and imperatives																											
Assess current application portfolio capabilities																											
Define future application portfolio																											
Develop future state roadmap																											
Conduct rationalization																											

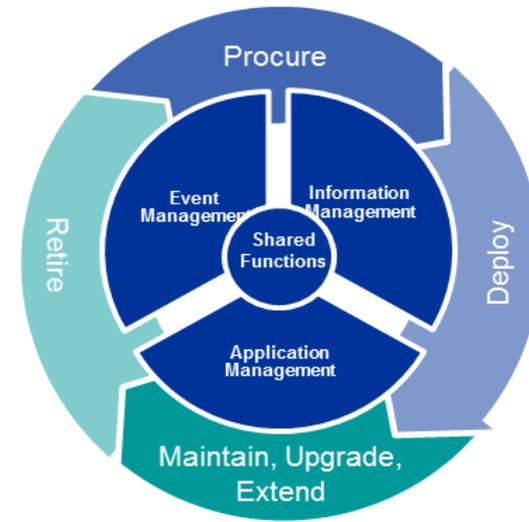
## B.2 Application Modernization

The application portfolio today is full of a diverse set of applications. There are a variety of development languages that were used 30+ years ago that are still in production. There are also thousands of access databases used for agency application processing and critical business functions .

Migrating outdated applications onto new platforms and ensuring all applications are up to State standards will enable many opportunities and efficiencies, including more services shared among agencies, easier migration to or extension of a standard application architecture, and optimized training for field adoption. Application modernization will also enable a standardized, and more successful, software development cycle in the future.

# Application Modernization Vision

Applications will run on State standard platforms utilizing current technologies, including operating systems and development software. Modernizing applications will allow for operation in virtualized and cloud environments, providing the flexibility and adaptability required by DoIT. Modernization will also allow for rapid development and deployment of mobile apps to promote constituent access to converged government services.



## Objectives:

### Modernize in a measured way

- Develop a risk-based modernization roadmap
- Start with clear high-value areas, such as applications built around unsupported platforms, and begin migrating to technologies on the long term roadmap
- Identify target architecture solutions (i.e. ERP) to address future state application capabilities

### Operationalize standards

- Implement ongoing processes for identifying non-standard applications and re-platforming them
- Establish processes for evaluating new application development to maintain ongoing alignment with the target application architecture

## Outcomes:

### More efficient and cost-effective application portfolio

- Lower labor costs through optimized business processes and more automated processes
- Lower infrastructure cost due to reduced application footprint and more efficient application processing
- Fewer maintenance and operational activities for standardized applications using current technology

### Modern applications on supported platforms

- Standards align with the enterprise architecture
- Less time spent extending or modifying legacy systems through use of modern architecture
- Business process standardization across agencies enabled through modernized application features, such as automated workflow

# Key Focus Areas – Recommendations

## People



- Train staff on the future state application architecture to help them understand the long term objectives and are prepared to understand the steps to modernization
- Create modernization teams that are focused on identifying applications that require modernization and executing on the plan
- Train staff on modern application technologies and languages to help their development mirror that of the application platforms

## Process



- Establish processes for evaluating new application development to make certain it aligns with the future state application architecture
- Implement processes for identifying applications that are non-standard and re-platforming
- Standardize application architectures across agencies through execution
- Identify continuous improvement opportunities to upgrade and consolidate applications
- Mobility application development process creation and implementation

## Technology

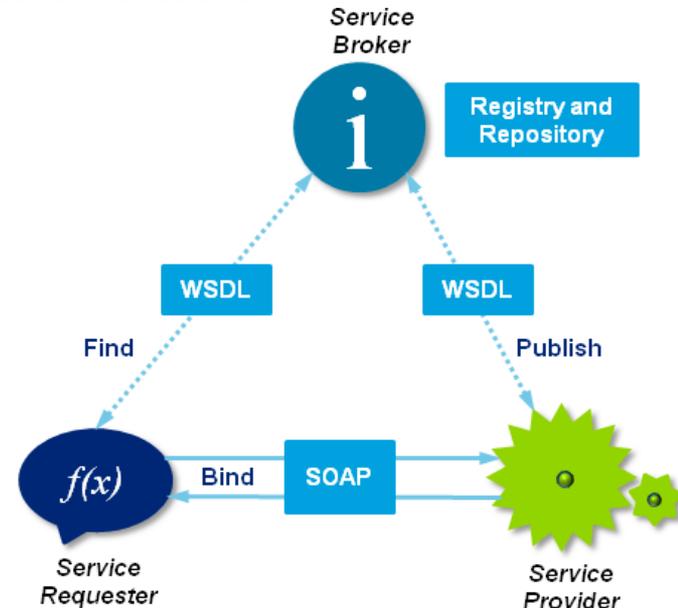


- Standardize on current development languages such as .Net, Java, ABAP for SAP, and Apple and Google mobile device development
- Identify target architecture solutions (i.e. ERP) to address future state application capabilities
- Migrate applications that are beneath standards to technologies that are on the long term roadmap
- Utilize technologies that align with application modernization standards and capabilities

# Application Interoperability and Reuse

The State of Illinois should utilize web services in the future state to take advantage of reuse and promote interoperability between disparate agency application architectures.

The web service approach is a logical evolution of object-oriented and component-oriented systems to systems of services (also known as service-oriented systems). Web services solves the challenges dealing with complex architecture systems, tightly coupling systems and applications and quickly adapting to new changes and scalability by creating an architecture of building blocks that are easily integrated and reusable.



## The Web services approach benefits are:

- **Promotes interoperability:** minimizes the requirements for shared technical understandings built on open standards:
  - Services are platform and language agnostic
  - Web services facilitate the interaction between systems developed on different platforms and/or languages
- **Enables just-in-time integration:** collaborations in web services may be bound dynamically at runtime or discovered and used during development using a service broker/registry and repository server
- **Reduces complexity by encapsulation:** all components in a web services are services which hide/encapsulate the business logic implementation exposing them through a public interface described by a web service definition language (WSDL) file

## Encapsulation is key to:

- **Coping with complexity:** reduces system complexity by invoking other services which hide the implementation details of the services
- **Flexibility and scalability:** replacement of different implementation of the same type of service, or multiple equivalent services at runtime
- **Extensibility:** behavior is encapsulated and extended by providing new services with similar service descriptions
- **Enables interoperability of legacy applications:** reuse legacy applications logic in the new system environment by wrapping them as a web service

# Recommendations and Plan

**Objective:** Migrating outdated applications onto new platforms and ensuring all applications are up to State standards

## Scope / Activities

- Develop the future state modernization strategy, including mobility applications :
  - Establish context and scope
  - Define target state
  - Perform reverse engineering
  - Create transition roadmap
- Design modernized applications:
  - Refactor, wrap code, retire, convert language, re-host, COTS or re-write
- Develop and integrate modernized and mobile applications
- Deploy modernized applications to achieve the target state

## Benefit Drivers

- Reduced system infrastructure costs through a reduced application footprint and more efficient application processing
- Reduced maintenance and operational activities through standardized applications utilizing current technology and tools
- Standardized business processes across multiple agencies through automated workflow
- Architectural standards that align with the enterprise architecture
- Rapid development of mobile applications to achieve constituent needs for access to government services

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation															
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	1	2	3	4	5	6																				
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Develop the future state modernization strategy																										
Design modernized applications																										
Develop and integrate modernized and mobile applications																										
Deploy modernized applications to achieve target state																										

## B.3 Digital Innovation

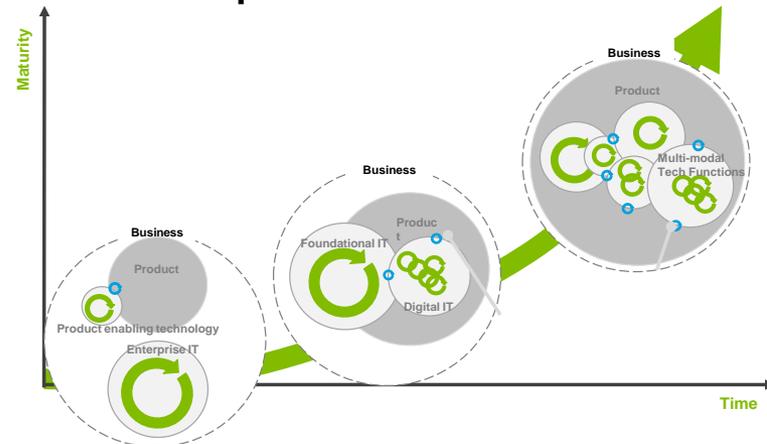
A majority of recommendations in this strategy focus on shoring up core assets and services to reduce large scale technical debt in Illinois, reducing cost, risk and increasing innovation.

An important part of IT Transformation is also the development of a bi-modal IT delivery model that enables Illinois not just to accelerate its modernization but to begin to deliver more innovative services in the short term. The State's digital innovation strategy provides a structure for delivering bi-modal IT and also highlights areas that the state can begin to focus on as part of this journey.

# Digital Transformation

Finding a balance between high-torque enterprise IT and high-speed innovation IT can allow DoIT to optimize technology operations. DoIT can calibrate the interrelated core capabilities below to find a point along the spectrum between the two modes that meets the needs of a given program, project, or product.

## Conceptual Model



### Objectives:

#### A constituent centric delivery model for IT

- IT is an enabling hub for constituent access to services, data and government
- Modern access and delivery of program information and services

#### A planned approach and structure to deliver innovation

- Nimbleness and agility in delivery of innovation not hindered by the technical debt of the State

#### Innovation at the edge

- Core services delivered by DoIT freeing up agency mindshare to conceive of and deliver new constituent centric solutions and collaborate on their use

### Outcomes:

#### Testbeds for new delivery models

- A fast fail model that allows the State to test and pilot capabilities
- Innovation delivery at the edge

#### Rapid adoption of constituent centric services

- Shortened delivery time of high value, modern services
- Leverage points to turn pilots into programs/services

#### Leadership among peers

- Drive quick learning above peer states
- Move from bottom tier to top tier IT execution among states

# Key Focus Areas – Recommendations

## People



- Integrate a brand new culture: manage uncertainty, permission to fail, multi-disciplinary, test and learn, constituent centric and high performance
- Build skills to deliver and support projects

## Process



- Deploy a new relationship with agencies by having a product management approach and a new demand process through IT Governance
- Deploy new project and program methodologies based on Agile software development where it makes sense
- Initiate new partnerships with suppliers through the Multi-step

## Technology

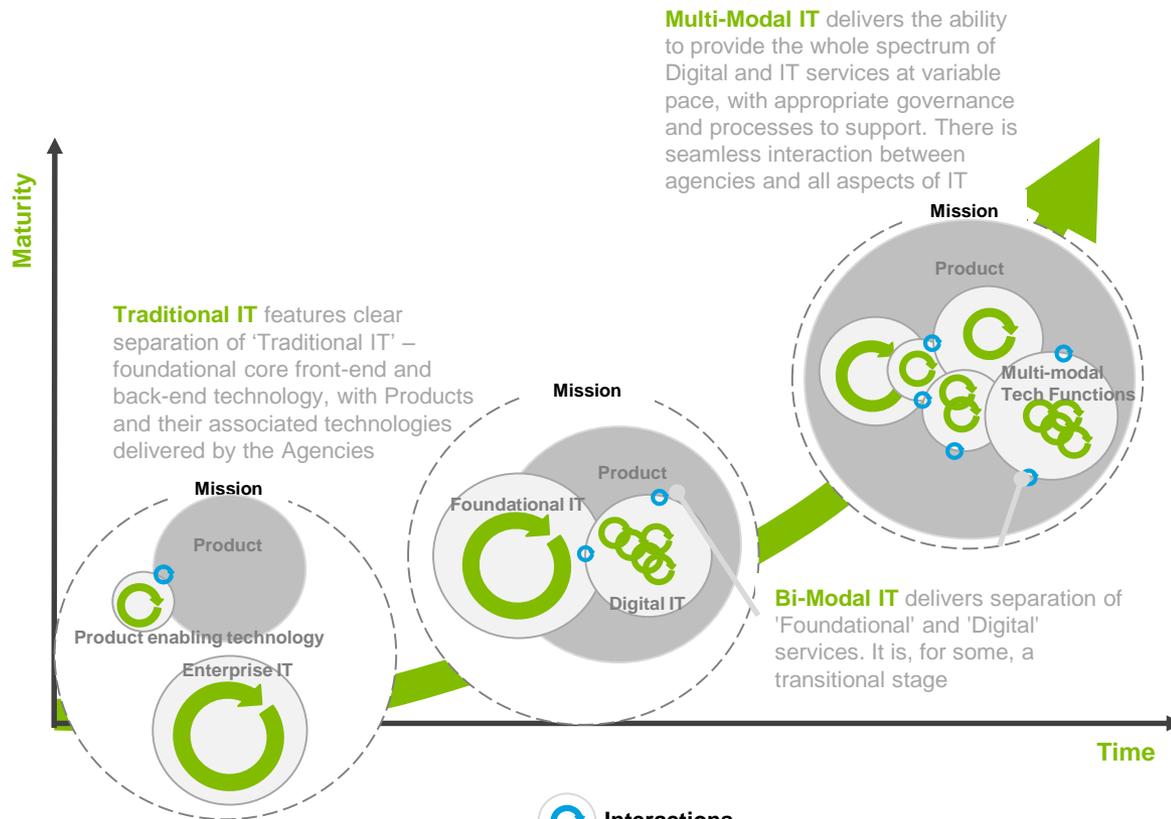


- Develop a new delivery model which that integrates: an application delivery model based on multi-channel innovation and a platform delivery model for stabilization and performance
- Deploy innovation methods through agency incubators and CoEs
- Include new concepts of Agile architecture: API management to manage the integration between the two modes
- Deploy DevOps methods and manage seamlessly infrastructures



# Adaptation in the IT Delivery Model

Deliver products and services for digital channels as well as products and services for the enterprise. Delivery at varying speeds, with very different change cycles: a multi-modal operating environment.



## Change cycles & process

Multi modal IT and Bi-modal IT allows DoIT to introduce the differentiation in change cycles (shorter more iterative), investment planning and governance and processes that are required to deliver against a digital strategy. Embed the ability to realize innovation within DoIT. This turns IT into an enabler, rather than simply a cost center. Getting the right governance and process in place is key.



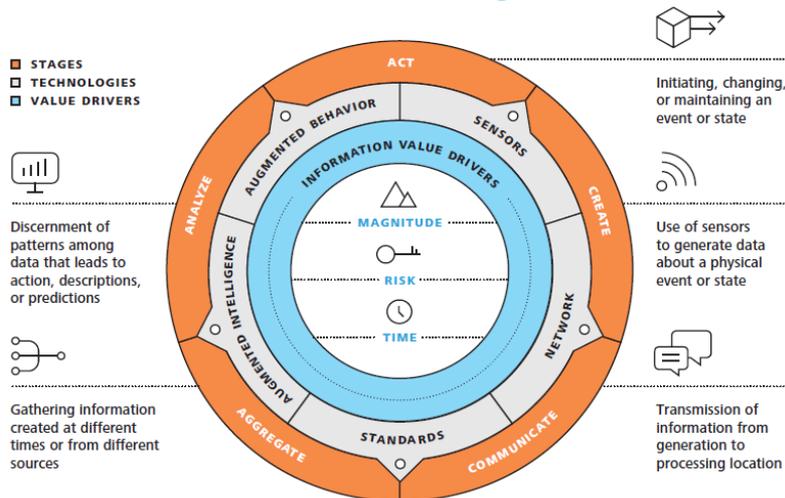
## Interactions

Moving from a traditional IT organisation fundamentally requires changes to your IT's interactions with the Business and leads to the need to establish multi-modal IT functions  
Communication and collaboration models change as the IT operating model moves into Bi-modal and again as it moves to become multi-modal. Business interaction with IT gradually becomes more decoupled as IT

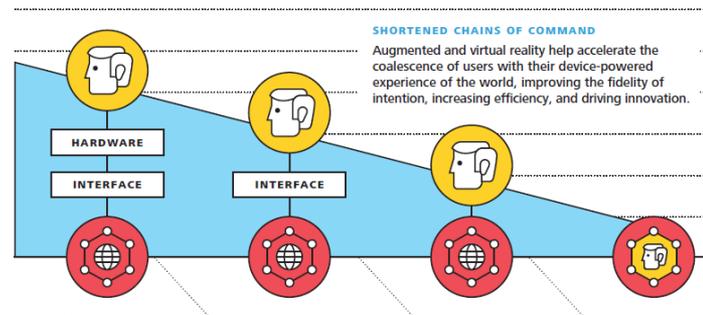
# Digital Innovation Delivery

Using a portfolio driven approach, Illinois can strategically drive innovation, investigating and allowing for rapid success or failure in delivery of new capabilities

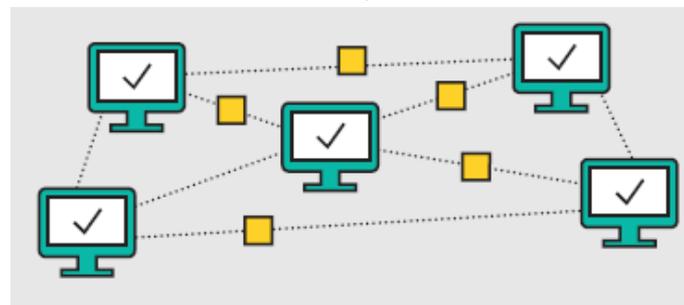
## Internet of Things



## Virtual Reality, Wearables

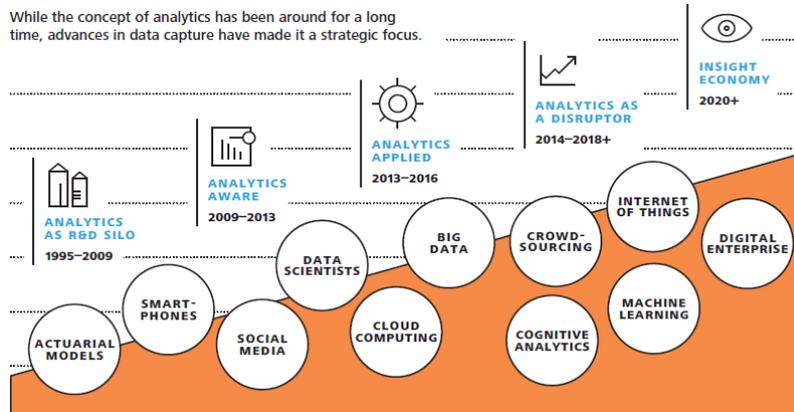


## Mobile, Social



## Analytics

While the concept of analytics has been around for a long time, advances in data capture have made it a strategic focus.



## ePayments, eCurrency, Blockchain



# Recommendations and Plan

**Objective:** Building on the foundation of modernization and rationalization to deliver citizen centric platforms and tools; creating bi-modal IT

## Scope / Activities

- Define delivery modes for different services and capabilities
  - Conduct strategy workshops with leadership across the State to agree on a vision
- Build structural supports
  - Build enterprise governance
  - Design delivery models
  - Train staff and build capabilities
- Launch, Deliver and Iterate
  - Launch service and capabilities through pilots and incubators
  - Review and assess successes
  - Incorporate lessons learned

## Benefit Drivers

- Executing on the digital innovation roadmap will provide the State with:
- A unified vision for how to deliver IT in a bi-modal way
  - A clear path to bring innovation into operation
  - Effective structural supports to build a model that sustains innovation
  - Delivery on the promise to bring Illinois to the leading edge when it comes to technology

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design						Stage 3-Implementation																	
	Sprint 1: High level design			Sprint 2: Day 0 readiness																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Define Delivery Modes																														
Build Structural Supports																														
Launch, Deliver and Iterate																														



# C. Integrated Service Delivery

# Integrated Service Delivery Overview

As part of the overall transformation, the State of Illinois has set out on a journey to improve the way service is delivered. In order to achieve this objective, the state should build out an integrated service delivery model that encompasses a holistic view of service management.

Here are four suggested initiatives which the state should undertake to deliver an integrated service delivery model:

## C.1 Service Desk Integration

Bring together disparate help desks throughout the state to leverage scale and improve the efficiency of service delivery and support



## C.2 ITSM Process Improvement

Develop a service mindset and standardize service management processes in order to drive high quality and consistent service delivery



## C.3 Service Catalog Management

Implement a unified IT Service Catalog that provides customers with an easy and intuitive way to find the services offered



## C.4 Customer Engagement

Put a model in place that builds consistency in customers engagement and better enables DoIT to provide value-added services



## C.1 Service Desk Integration

In the current state, end user support is delivered in an inconsistent way. There is a centralized service desk, though independent help desks with various capabilities are operated by agencies. Processes and maturity levels are not standard.

To deliver high quality and consistent services, DoIT will consolidate functions of many separate IT Service Desks into a single shared entity. By redesigning Service Desk processes to offer more end-to-end management of IT support, this initiative will reduce the State's total IT support costs, reduce the time to obtain IT services, and increase the consistency of service performance to all agencies.

# Service Desk Integration Vision

DoIT will develop a central support hub to coordinate incidents and services. The model will place added emphasis on managing service delivery and the overall customer experience.

To account for unique security requirements, the future state will include a central common service desk, and a dedicated specialized group to address the unique availability / response time of Public Safety.

The service desk will standardize on a set of core processes that are currently performed inconsistently across the State. To accomplish this, Level 1 agents from the dispersed agency service desks could join the consolidated team and all use common processes and technology where feasible.

## Objectives:

### Define “ways of working”

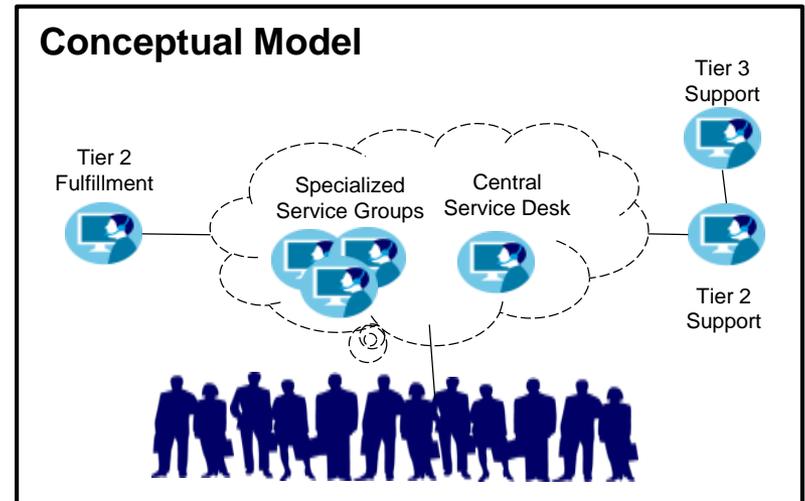
- Document detailed process guides and rollout in a prioritized way based on impact
- Utilize tools and automation where feasible

### Continually measure, report, and improve

- Define key metrics for service delivery and implement mechanisms to gather feedback from end users

### Implement a standard approach to integration

- Integrate new staff in a consistent manner, providing them with the tools, processes, and other information they need to be productive



## Outcomes:

### Higher uptime and fewer service disruptions

- Standardized processes and escalation/routing protocols reduce customer experience disruptions
- Roles and ownership are clearly defined and tools are in place to enable easier incident management
- Documentation is available at the right level of detail, and training is provided to staff

### Better service delivery and high customer satisfaction

- Staff are trained, knowledgeable, and function as one cohesive service desk delivering a consistent message to the customer
- Continual service delivery improvements occur as a result of effective feedback loops

# Key Focus Areas – Recommendations

## People



- Integrate current fragmented service desks into a single point of contact for the end users
- Build a specialized service desk group to address special requirements. Group will have access to unique tools as necessary to provide services to their end users
- Define the scope of responsibilities at Level 1 to align with realistic staffing levels in the service desk

## Process



- Define standard service desk processes and use consistent processes across DoIT to support incidents and requests
- Provide staff across all levels with a consistent understanding of processes, scope of services, and escalation/routing protocols
- Define common service reporting metrics
- Common services would be routed through the central service desk

## Technology

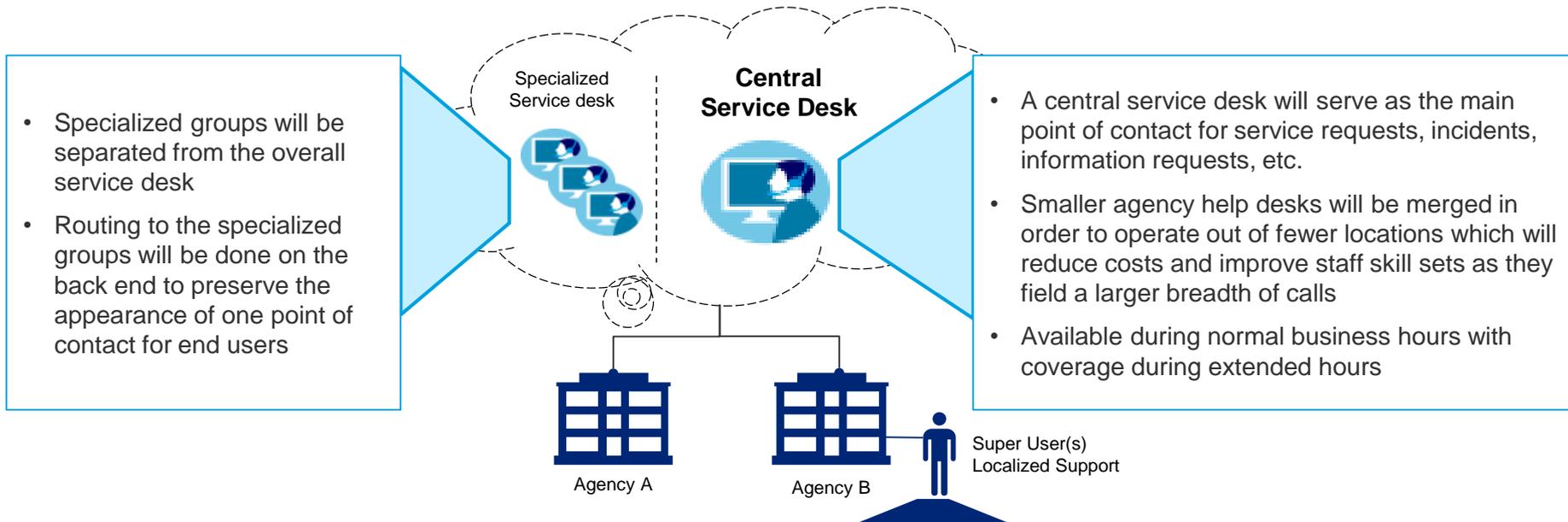


- Use a single IT Service Management tool (Remedy) across all DoIT to:
  - Track and view incident, problem, and request records
  - Capture and maintain known errors and knowledge articles
  - Log changes and maintenance windows
  - Capture alerts and events
- Host the service catalog and facilitate many common fulfillment workflows
- Designate a single phone line and web-form for all IT help, while ticket is routed internally within DoIT and route calls using an Automated Call Distribution system
- Provide customers access to self-service web interface to minimize calls to service desk

# Service Desk Model

A service desk model will be put in place to address both broad areas through a central desk and more specialized areas through dedicated service desk(s)

## Virtual Service Desk



- Specialized groups will be separated from the overall service desk
- Routing to the specialized groups will be done on the back end to preserve the appearance of one point of contact for end users

- A central service desk will serve as the main point of contact for service requests, incidents, information requests, etc.
- Smaller agency help desks will be merged in order to operate out of fewer locations which will reduce costs and improve staff skill sets as they field a larger breadth of calls
- Available during normal business hours with coverage during extended hours

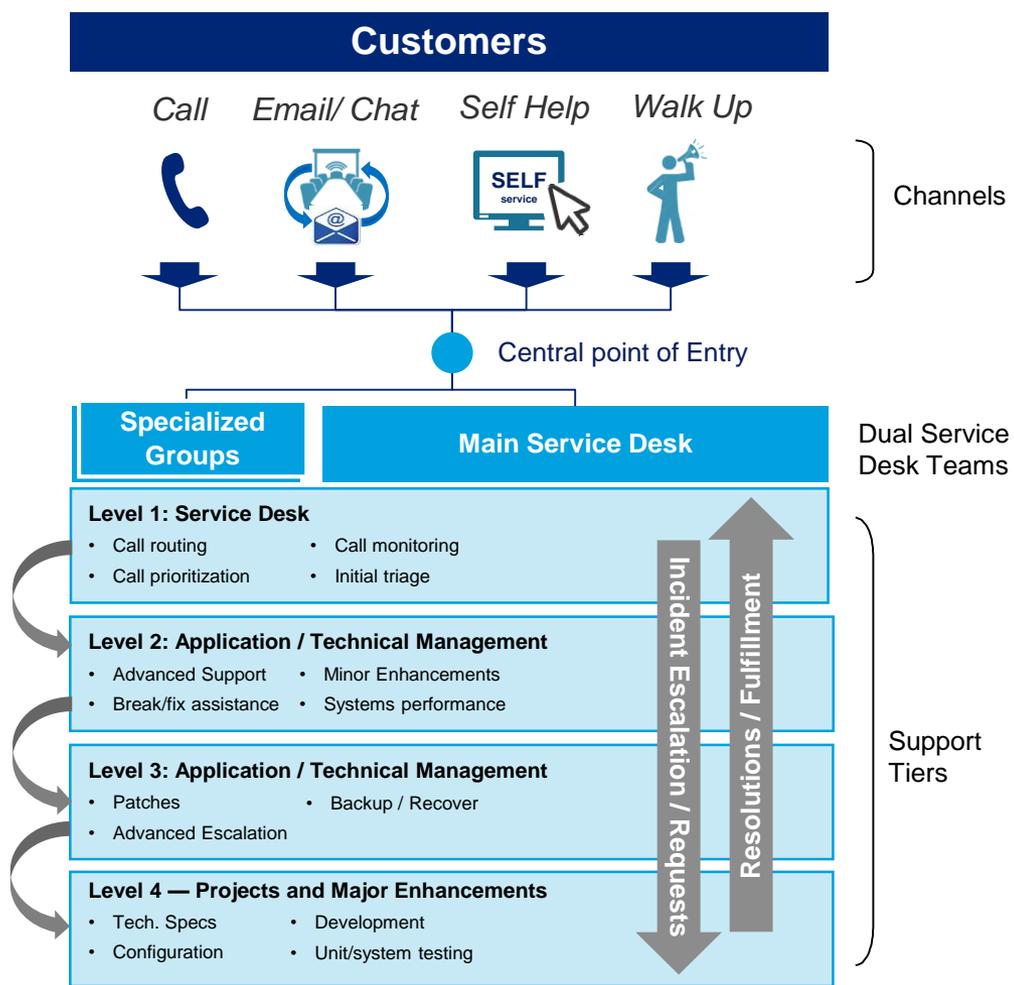


With a virtual service desk, staff will maintain a single point of entry but have presence in both Springfield (primary) and Chicago to dispatch local support

- For certain agencies, super users will be appointed by the service management group and act as a liaison and provide localized support
- Super users will function as an extension of the service desk and follow all standard processes around incidents and requests

# Service Desk Model: Interactions

The model is built based on the industry standard concept of service tiers, which drives consistent interactions between support staff



## Multi-Channels

A multi-channel model enables end users to access support through phone, email, and other channels including self help. The model also enables end users to obtain information directly from the ticketing system, and communicate with support personnel as to the status of their incident, actions being taken etc. Through Remedy, customers will be able to follow the status of their interactions (i.e. incidents / requests)

## Central Point of Entry

A single point of entry provides end users with a simple and consistent method for raising issues / requests

## Separate Service Desk Teams

A Central Service Desk will be complemented by specialized service groups to account for unique agency requirements

## Specialized Support Tiers

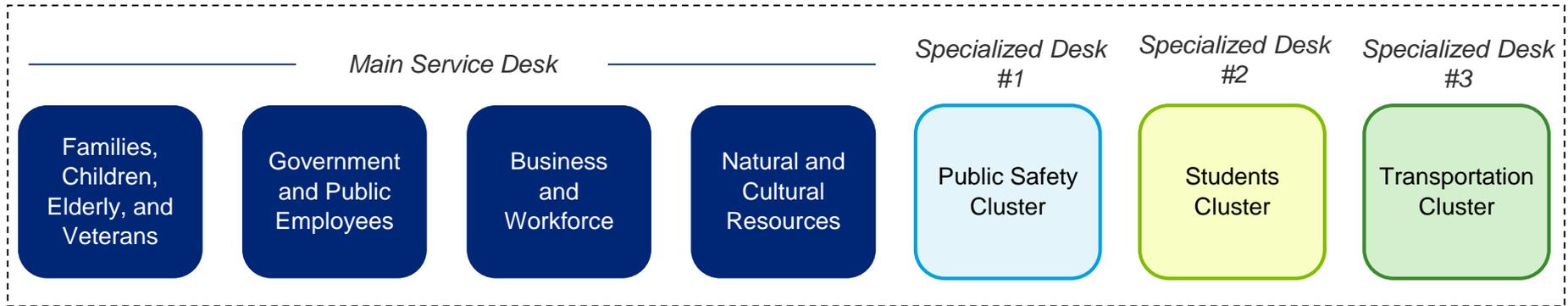
The tiers drive highly transactional and simple requests (account management, password resets etc.) to happen at the least expensive channel, reserving escalations to more costly service tiers for application or infrastructure specific issues. The scope (depth) of each tier will depend on the associated staffing

## Escalation:

Standard escalation / routing protocols are defined to enable efficient routing of tickets

# Service Desk Model: Specialized Groups

Four service desks (1 central, 3 specialized) will be used to administer Level 1 support



Specialized Groups	Main Service Desk
<b>Level 1: Service Desk</b>	
<ul style="list-style-type: none"> <li>• Call routing</li> <li>• Call prioritization</li> </ul>	<ul style="list-style-type: none"> <li>• Call monitoring</li> <li>• Initial triage</li> </ul>
<b>Level 2: Application / Technical Management</b>	
<ul style="list-style-type: none"> <li>• Advanced Support</li> <li>• Break/fix assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Minor Enhancements</li> <li>• Systems performance</li> </ul>
<b>Level 3: Application / Technical Management</b>	
<ul style="list-style-type: none"> <li>• Patches</li> <li>• Advanced Escalation</li> </ul>	<ul style="list-style-type: none"> <li>• Backup / Recover</li> </ul>
<b>Level 4 — Projects and Major Enhancements</b>	
<ul style="list-style-type: none"> <li>• Tech. Specs</li> <li>• Configuration</li> </ul>	<ul style="list-style-type: none"> <li>• Development</li> <li>• Unit/system testing</li> </ul>

- Specialized service groups will be used to service agencies with unique requirements related to service levels and security
- Although specialized with regards to the services provided, each service desk will be able to freely transfer and communicate amongst each other
- These groups may have:
  - Unique logical/ physical access to systems and locations not available to the main desk
  - Potentially additional security clearance (ex: background checks, fingerprinting)
  - Additional service level requirements or faster service response times

# Overview of Transition Options

Two options were identified based on the most practical ways to transition to the future state



## Option 1 Transition All at Once

In this option, all the areas that will be integrated into the central service desk are transitioned together



## Option 2 Transition in Phases

In this option, areas that will be integrated into the central service desk are transitioned in waves or groups

### Considerations:

- In this approach, all prerequisites for the transition would need to be completed before any part of the transition can begin. This would include:
  - Inventory and data gathering prerequisites
  - Future state process and associated training material
  - Technology updates and configurations
- At the time of transition, all agencies would begin using a standardized approach, which would be high impact but potentially shorter duration

### Considerations:

- With this option, phases / waves would need to be defined to determine how each area would be integrated into the central help desk
- Phases would be organized in a way to maximize the value of integration, selecting those agencies / services that provide the most benefit, while trying to minimize the disruption of services
- Prerequisites and dependencies would depend on the overall phased approach
- This approach allows the transition to be coupled with other IT Transformation transition activities which should minimize separate disruptions to an agency

Each transition option will be assessed against a common set of criteria to determine which is the best going forward

# Transition Assessment Criteria

A set of objective criteria was established to evaluate each option in order to determine which option was most viable

Evaluates the level of coordination and complexity with execution.

*Example: The transition strategy calls for fewer steps or less coordination required between groups*



Measures how the approach enables the State to transform and streamline statewide IT operations

*Example: The transition quickly establishes a clear delineation of ownership, which helps streamline operations and improve service delivery*

Measures the risk that existing services could be impacted by the transition

*Example: Transition strategy allows service delivery teams to keep delivering the same services*



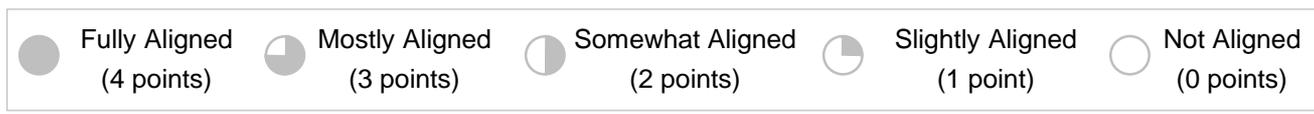
Evaluates costs to implement strategy, such as those required to bring on contractors for backfill

*Example: The transition strategy calls for fewer contractors during the transition, or contractors are scaled up and down over time to minimize overall contractor cost*

# Assessment Results

Using the criteria below, a comparative analysis was conducted to determine which of the options were best suited to the needs and requirements of the IT future state vision

Evaluation Criteria	Relative Alignment	
	Option 1 – One-Time	Option 2 – Incremental
<b>Reduce Complexity</b> Reduces the number of moving parts during the transition		
<b>Quickly Achieve Future State Vision</b> Transforms and streamlines statewide IT Operations		
<b>Reduce Risk to Service Continuity</b> Reduces risk of impacts to existing services		
<b>Reduce Costs or (Opportunity Cost)</b> Reduces cost to implement or the opportunity cost of pursuing other initiatives		
<b>Overall Alignment</b>	<b>7 Points</b>	<b>10 Points</b>



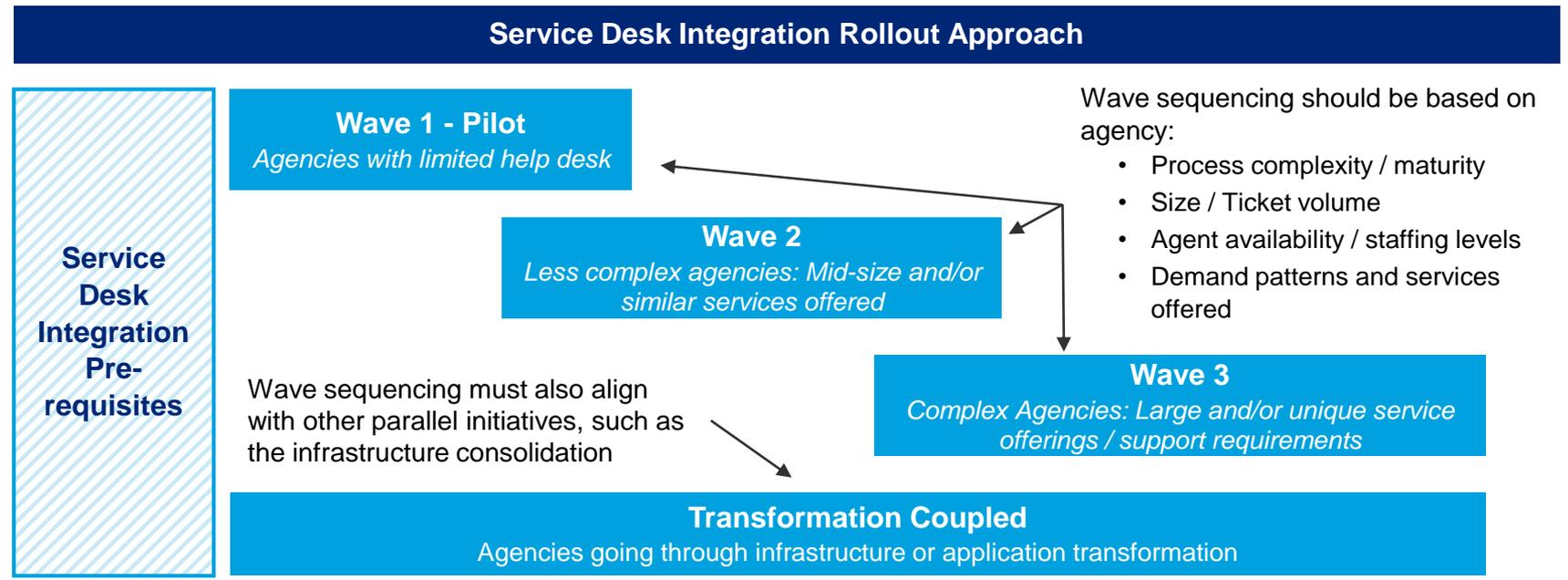
Although the one-time approach does potentially achieve the end state faster, the complexity of integrating all at once and the risk to disruptions to existing services result in the incremental approach being more prudent.

Based on the analysis, an incremental approach is recommended for the integration of the disparate service desks.



# Approach to Implement

Following an incremental approach, agencies will be grouped into waves based on a set of defined criteria



After initial data gathering, waves / phases should be executed according to the size and complexity of the agency, as well as, where the agency falls within the infrastructure transformation timeline

# Recommendations and Plan

**Objective:** Integrate service desk operations for the State to increase efficiencies and streamline the service desk process which will improve overall customer satisfaction

## Scope / Activities

- Initiate Planning and Data Gathering
  - Identify Dependencies; Gather agency integration baseline; Gather current requirements baseline
- Design operating model
- Design service management processes (part of ITSM Process Standardization)
- Prepare for transition
  - Setup tool; Establish internal services; Build and test integrated contact routing; Build and test service processes and reporting; Conduct training
- Conduct pilot
- Conduct phased rollout
  - Plan migrations; Prepare migration processes; Migrate in waves; Stabilize and support; Post-consolidation

## Benefit Drivers

- Re-envisioning the Service Desk, as a primary hub for customers to obtain a wide range of IT services, offers
- Cost efficiencies through integration. Savings opportunities, due to the reduced overhead costs and improved staff efficiencies through standardized processes
  - Additional support capability from a central coordination point to eliminate some of the complexities with multiple support functions when trying to transfer or coordinate issue resolution
  - Through better process design, this approach will shorten the time for provisioning IT services which will improve worker productivity by providing the state with vital services to perform their work
  - Reduced risk using a single system to properly analyze and handle changes and incidents
  - Reduces agency haves and have-nots

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Initiate planning and data gathering																											
Design operating model																											
Design service management processes																											
Prepare for transition																											
Conduct pilot																											
Conduct phased rollout																											

## C.2 ITSM Process Improvement

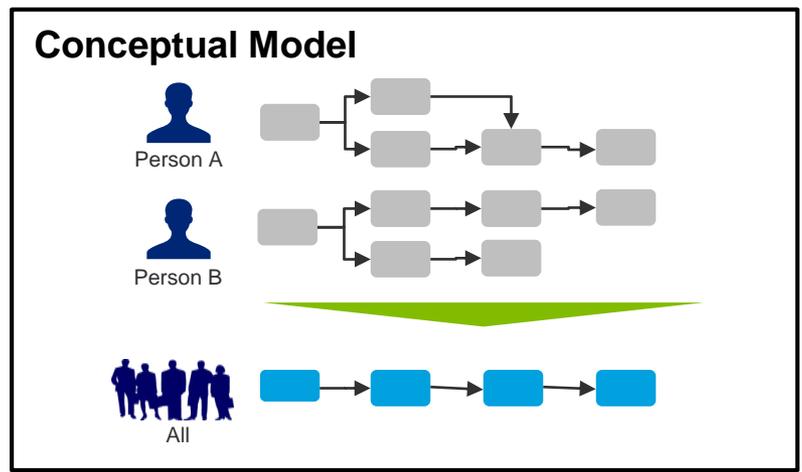
In the current state, pockets of maturity exist; however, as a whole, processes are inconsistent and complex across the state. Even for core processes there are many handoffs to get tasks completed because of work silos. Additionally, there appears to be inconsistent measurement of service performance. The inconsistency and complexity ultimately lead to a fragmented customer experience which has adverse impacts on customer sentiment.

Going forward, DoIT should develop a service mindset and standardize service management processes in order to drive high quality and consistent services. By standardizing processes, DoIT will be able to provide a more consistent user experience and improve service levels.

# ITSM Process Improvement Vision

The ITSM Process initiative aims to establish consistency, accountability, and transparency across DoIT by designing and implementing standard end-to-end service management processes.

This initiative will focus first on those processes most impactful to the end user, evaluating not only the process activities, but also putting in place other supporting aspects such as how the process interfaces with other processes, what metrics are used to manage the process, and how oversight occurs.



## Objectives:

### Solidify core Service Management processes

- Implement a measured approach to improvement, focusing first on service delivery and service support
- Incorporate process best practices

### Integrate across the State

- Define standard service management processes
- Standup new integrated service management

### Address all aspects of a process, not just the process steps

- Implement governance and introduce process ownership
- Define and manage through Key Performance Indicators ( KPIs)
- Fully utilize tools and automate where available

## Outcomes:

### Adaptable processes for future business needs

- Processes are efficient and utilize best practices

### Consistent customer IT experience

- Processes are easy to understand, regularly followed by support staff, and standardized across the State
- Data exchange and interoperability exists between processes and tools

### Controls are in place to identify and proactively correct deviations

- KPIs are used to enable outcome-based management

# Key Focus Areas – Recommendations

**People**



- Establish a process owner for each process
- Clearly define and document roles and responsibilities within each process and ensure every step in the process is assigned to a role
- Conduct knowledge sessions on frequently occurring service delivery / support related topics
- Build out service planning and management function

**Process**



- Focus on “Core” customer facing processes first
- Define “ways of working” by developing Standard Operating Procedures (SOPs), complementary to the service management processes
- Define basic process building blocks that can be standardized across the state to establish consistency of operations and execution
- Institute weekly (tactical) and monthly (functional / strategic) oversight meetings and integrate with quarterly governance meetings
- Review KPIs for the process, by manager, by service, platform, customer, etc.
- Utilize both reactive (past performance) and proactive (trending) measurement methods
- Institute KPIs that measure process results, supported by measures of process compliance
- Document interfaces with other ITSM processes and specify elements exchanged

**Technology**



- Leverage out-of-the-box features to reduce configuration time and maintenance costs, only making customization when required
- Where available, use tool workflows to automate and standardize process steps
- Implement tool training so tools are used in a consistent way as new personnel are brought on-board

# Process Filtering

The following approach was used to filter the processes listed in the framework down to a manageable number

## Filter Approach

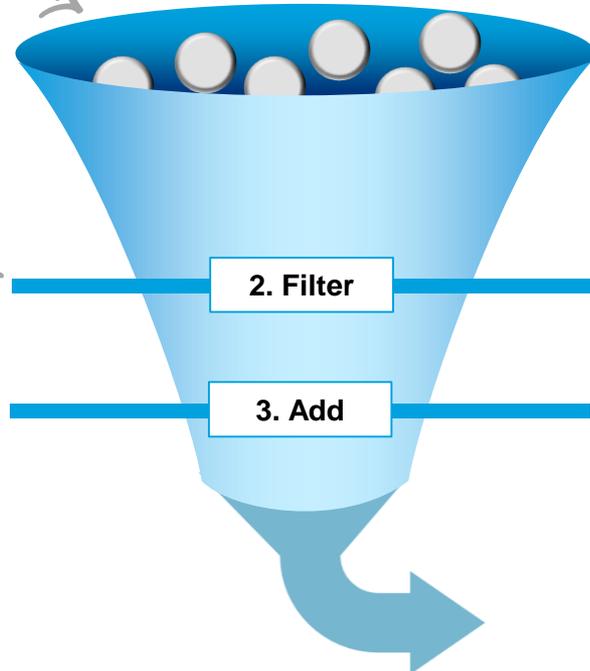
**1. Start with the Framework**

**2. Filter by "Run" domain**  
*Although improvements can be made throughout DoIT, those within the "run" domain are the most impactful to the end user*

**3. Add back key processes**  
*Some processes outside of "Run" will be needed to support ongoing initiatives*



**47 Initial Areas**



**37 Non-Run related areas removed**

**7 Non-Run related processes added back**

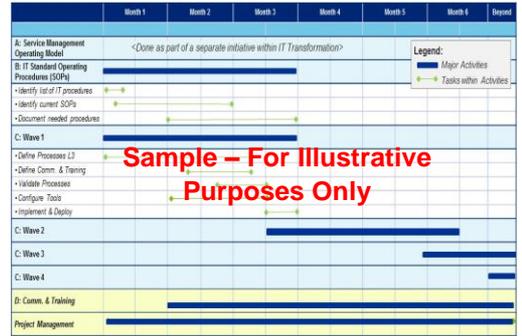
### Result in 17 Processes

- Incident Management (run)
- Problem Management (run)
- Request Fulfillment (run)
- Service Continuity (run)
- IT Security Management (run)
- Service Level / Reporting Mgmt. (run)
- Event and Alert Management (run)
- Access Management (run)
- Availability Management (run)
- Capacity Management (run)
- Knowledge Management (transition)
- Change Management (transition)
- Release & Deployment (transition)
- Asset and Configuration (transition)
- Service Catalog Management (build)
- Portfolio / Project Mgmt. (build)
- Business Relationship Mgmt. (customer)

# Roadmap Components

The following views lay out the timelines and activities for the overall implementation

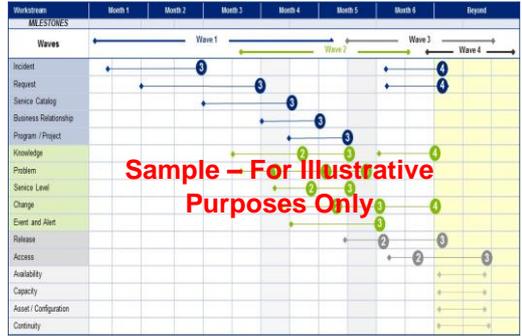
## High Level Activities View



Contains the high-level view of the activities:

- A. Service Management Operating Model
- B. IT Standard Operating Procedures
- C. Service Management Processes
- D. Communications and Training

## Process Implementation View



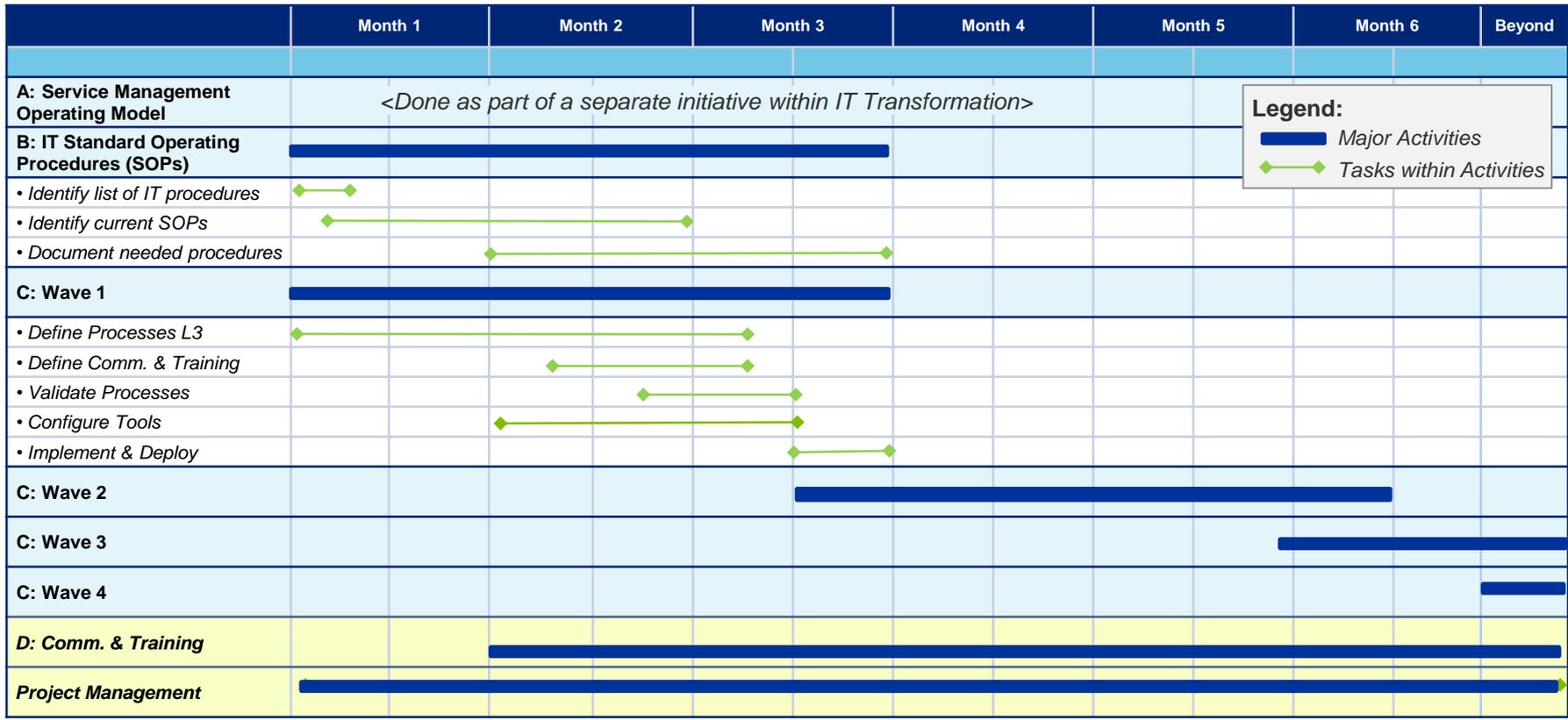
Contains a view of the evolution of each process throughout the program timeline. Processes can be actively worked on in one or more releases when they undergo an improvement lifecycle as described below:

- 1 Level 1: Process elements are ad-hoc
- 2 Level 2: Basic process elements exist, but reactive
- 3 Level 3: Formal process is defined and standardized
- 4 Level 4: Process is managed and service driven
- 5 Level 5: Process is value driven with controls and continual improvements

Two different views are used to convey 1) the overall timeline and 2) the timing for implementing each process

# High Level Activities View

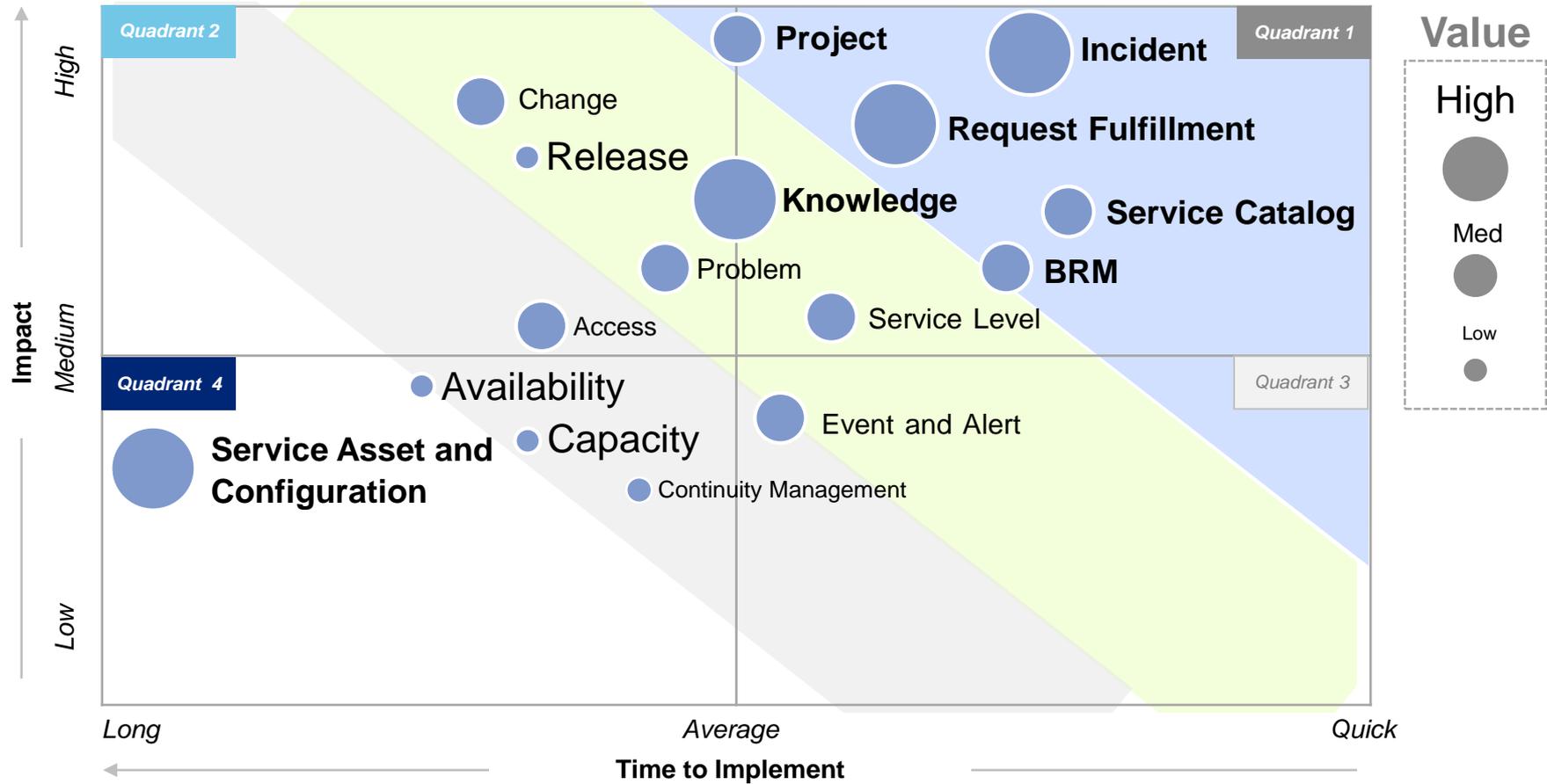
The roadmap below presents the high-level timeline of activities of the implementation



The timeline above depicts the length of time needed to achieve a level 3 maturity (processes standardized and documented). Some processes may extend beyond if targeting a higher maturity

# Prioritization – Feasibility, Time and Value

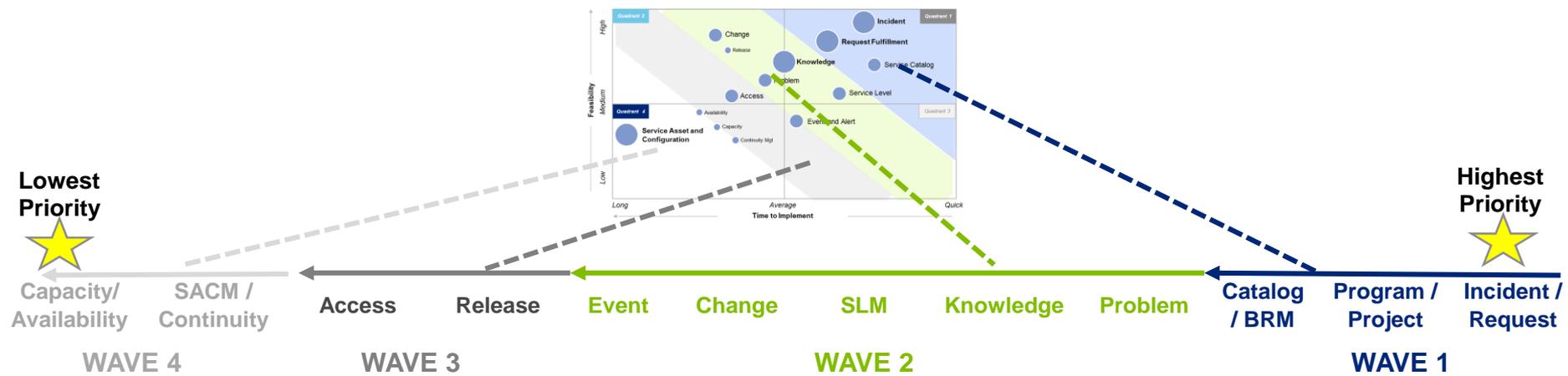
Each filtered processes was ranked and plotted based on Impact, Time, and Value



- **End User Impact:** Level of impact and visibility to the end user
- **Time:** Months required to implement
- **Value:** Derived benefit of getting from current to target maturity

# Recommendation Prioritization

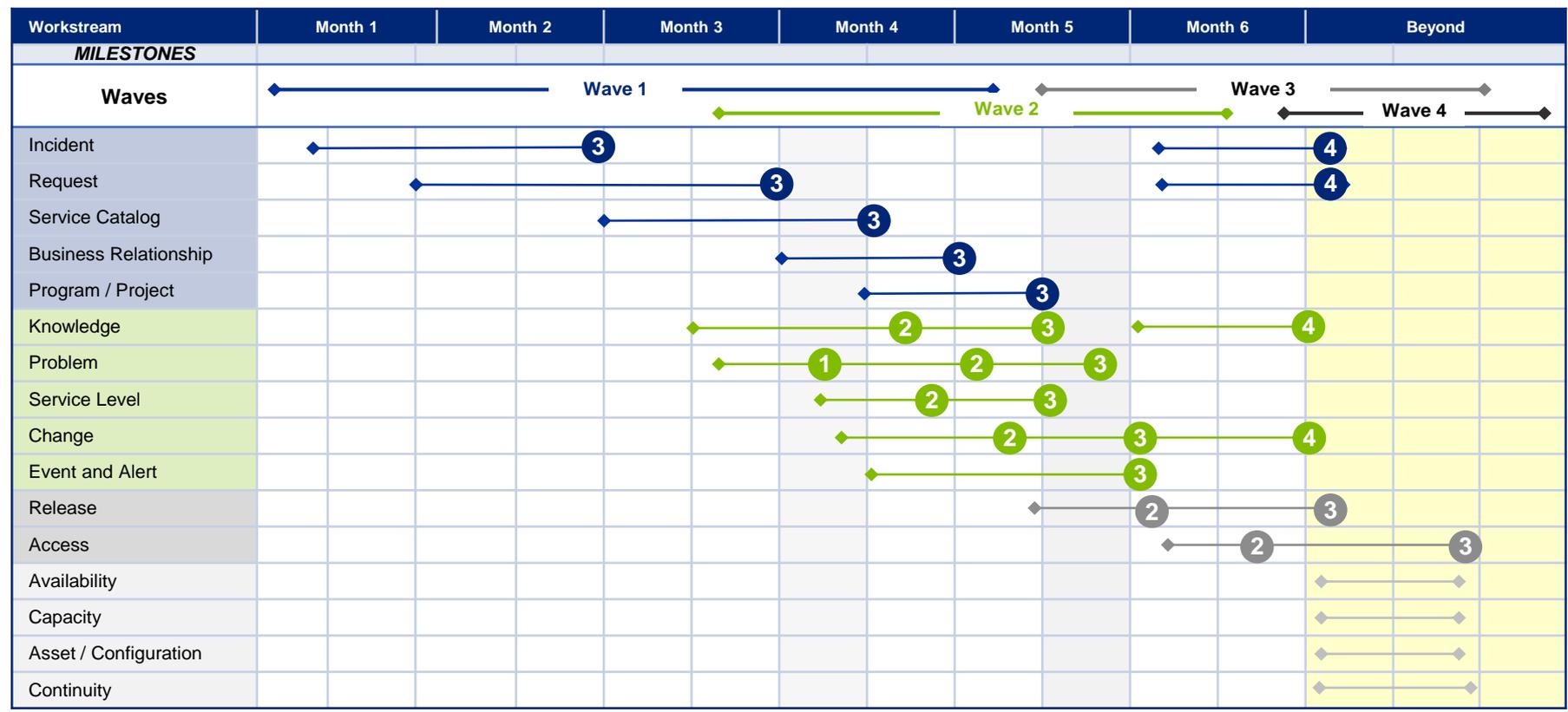
Based on the plotting, processes were grouped into implementation waves



Waves	Objective
<b>Wave 1: Core Processes</b> <i>All in Blue band</i>	These processes typically have high value due to the associated direct impact / visibility to the end user
<b>Wave 2: Supplemental Core Processes</b> <i>High/Medium Value in Green Band</i>	These processes have high value potential due to large gaps or complement the processes from Wave 1
<b>Wave 3: Non-Core Processes</b> <i>All in Blue/Green band or High / Medium Value in Grey Band</i>	These processes have a lower impact to the end user and may take longer to implement or see limited value in closing the maturity gap
<b>Wave 4: IT Operation Processes</b> <i>Remaining</i>	These processes typically are not end user facing and focus more on improve the operations of IT (which indirectly may impact the end user)

# Process View

The roadmap below represents the sequence of how the processes will be rolled out



An 'iterative' approach will be used during the implementation. In other words, processes in wave 1 may pause at an interim maturity level so that subsequent waves can be defined. For example, if the end target maturity for incident management is 4, the interim target may be set at 3 so that teams can move to define processes in other waves. At some point, incident management will be revisited to achieve the end target level.

# Recommendations and Plan

**Objective:** Standardize processes and implement service management best practices

## Scope / Activities

- Establish operating model (part of Service Desk Integration)
- Establish standard operating procedures
- Rollout core processes
  - Incident Management
  - Request Fulfillment
  - Service Catalog Management
  - Business Relationship Management
  - Program / Project Management
- Rollout processes supplemental to the core processes
- Rollout other service management processes
- Rollout IT operational processes

## Benefit Drivers

- Each process demonstrates clear value to the customer and produces clear outputs
- Each process can be measured and evaluated to determine effectiveness
- Support teams are aware of interfaces and can handle issues and manage IT changes
- Executing standard processes following pre-defined steps allows consistent / repeatable outcomes and reduced risk of adverse conditions
- Clearly defined responsibilities allow better collaboration when staff know who is responsible for what

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	1	2	3	4	5	6																					
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Establish operating model	<i>Done as part of Service Desk Integration</i>																										
Establish standard operating procedures																											
Rollout core processes																											
Rollout processes supplemental to core processes																											
Rollout other service management processes																											
Rollout IT operational processes																											



## C.3 Service Catalog Management

Today, there is a service catalog; however there are no processes to update and manage the service lifecycle, which as led to difficulties maintaining an accurate list of service information. The service catalog lacks critical details that other states use to describe services, including a service owner, and agencies have expressed a mismatch with price and service quality/value.

Going forward, DoIT should implement a unified IT Service Catalog and management approach that provides DoIT customers with an accurate representation of the services offered and facilitates a smooth and consistent experience through the service request process.



# Service Catalog Model Vision

The Service Planning and Management group will develop and maintain a comprehensive service catalog. The catalog will serve as a single source of truth for the services offered by IT and be accessible to all authorized end users. Each service will have plausible and stretch targets for service level performance.

The State will have a clear understanding of the internal cost of each service, as well as how each compares to services in the open market. Processes will be in place to manage the service portfolio throughout the service lifecycle, including proposed, active, and retired services.

## Objectives:

### Standardize service delivery processes

- Establish accountability and ownership for each service
- Implement tools that can capture orders and automate where possible

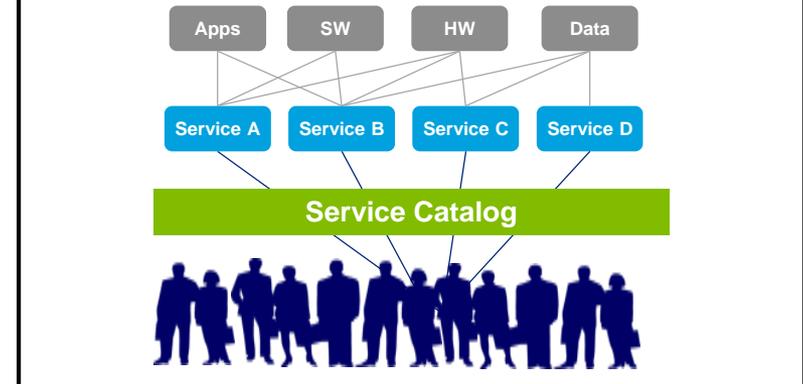
### Maintain a single catalog for enterprise services

- Group services based on how customers use them, not the technology components, and include comprehensive service descriptions

### Formalize how the catalog is managed

- Implement processes to introduce, maintain, and retire services

## Conceptual Model



## Outcomes:

### Consistent, positive service ordering experiences

- Clear customer expectations on service delivery
- Alignment with service delivery expectations and fulfillment

### A convenient one-stop shop for IT services

- A single master listing of services for customers
- Clarity around service features, service costs, and service details

### An accurate catalog of services

- Ownership and accountability for each service
- Standardized processes are used to maintain the catalog, adding new services and retiring existing services in a consistent method





# Key Focus Areas – Recommendations

## People



- Establish service owners either at the service category level or at the individual service level
- Empower service owners to make decisions and be held accountable for service level objectives / targets

## Process



- Operationalize a process to manage the lifecycle of services from creation through retirement
- Create certain IT Service Bundles that are aligned with business processes (ex: employee onboarding for access management, telephone set-up, cell phone, etc.)
- Designate certain services as “required” if other related services selected (ex: Disaster Recovery)
- Correlate items in the service catalog with request fulfillment tracking to gain better insight into service demand and actual fulfillment times
- Include service level targets for each service in the catalog along a consistent set of service objectives (ex: Availability, Fulfillment Timeliness, etc.)

## Technology

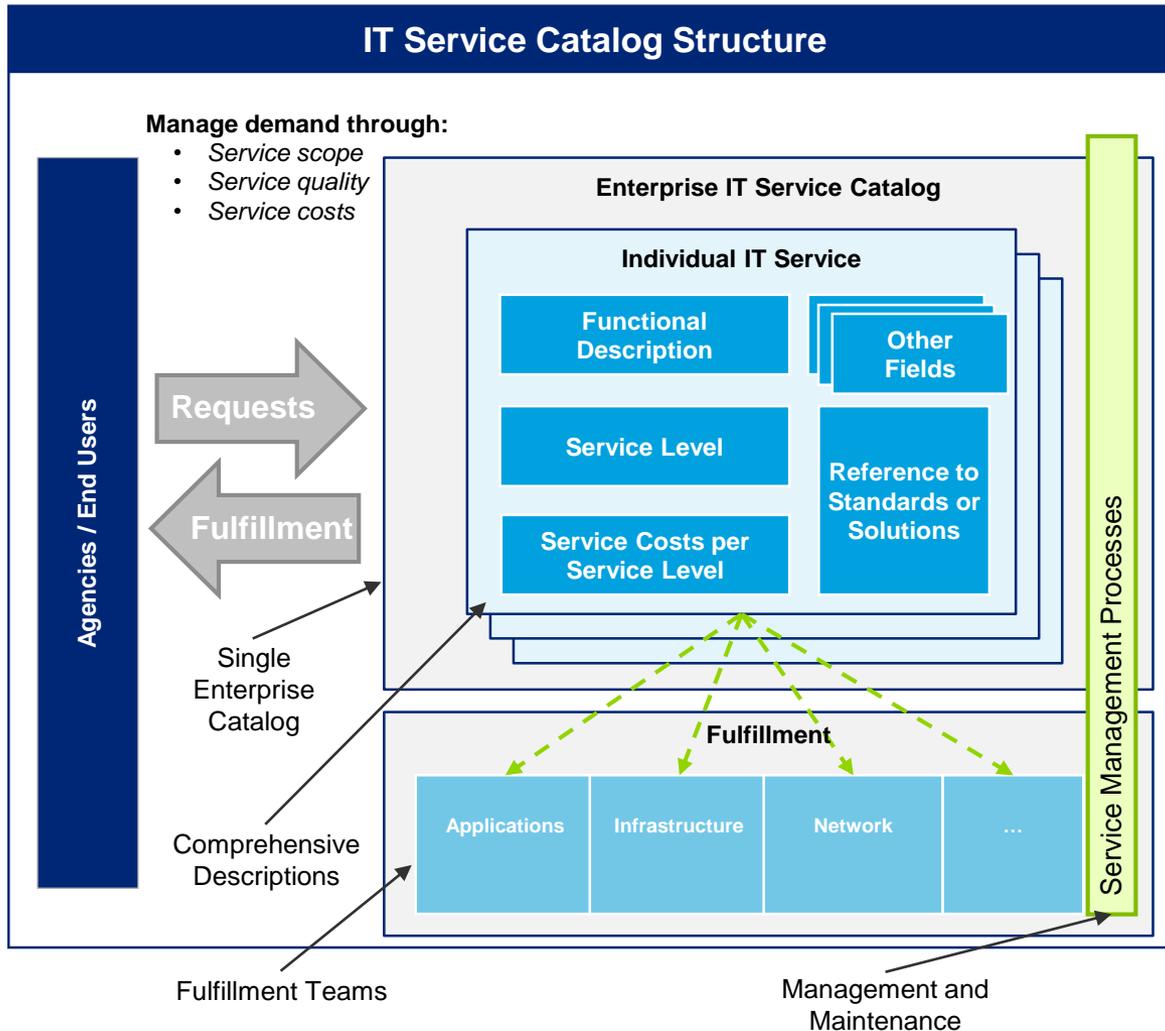


- Implement a single unified catalog of IT services available on a self-service portal
- Revise the IT service catalog to be more comprehensive than a list of commodity technologies because end-to-end services are more valuable to the agency IT functions.
- Enable automated ordering, approver routing and fulfillment workflows
- Ensure services listed on the catalog tie to requests in the tracking system so that service demand can be captured and correlated
- Enhance the existing catalog with comprehensive descriptions that include order guides, SLAs, price information, and reference documentation



# Service Catalog Model

The model is used to drive consistency through a set of standard interactions throughout the service delivery process.



## Single Enterprise Catalog

- A single point of entry provides end users with a simple and consistent method submitting requests. Typically this would be available through a web interface

## Comprehensive Descriptions

- Detailed descriptions provide the user with the information they need to make informed decisions about services

## Fulfillment Teams

- The model is built based on the concept of fulfillment teams for standard services
- The teams allow for standardized fulfillment processes to be performed in an efficient and predictable manor, leaving more complex tasks to be handled by separate hourly type services

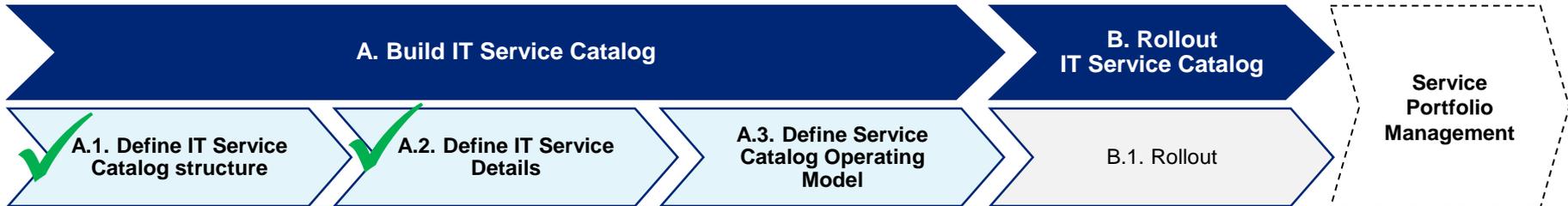
## Management and Maintenance:

- Standard processes, roles, etc. are in place to manage the ongoing activities surrounding the catalog



# Step: Build IT Service Catalog

The first two steps of implementing the service catalog were completed through working groups. The third step will be addressed through the ITSM process initiative



**Proposed Future State Catalog** Type

Application Development and Support  
*Application Development (inc. Mobile)*  
*Application Maintenance and Support*  
*Web Design & Development*

Enterprise Applications  
*Accounting Information Services*  
*Adobe Reader Extensions*  
*Central Inventory System*  
*Central Payroll System*  
*Central Time and Attendance System with eTime*  
*Electronic Paystub System*  
*File Transfer Utility*  
*Citrix*

Collaboration and Communication Tools  
*Enterprise Email*  
*Enterprise List Server*  
*Jobber*  
*Sharepoint team sites*

Enterprise Desktop Services  
*Customer Support Center (CSC)*  
*Desktop Support*

Hosting Services  
*Cloud Hosting - Future Service*  
*Co-Location*  
*Disaster Recovery*  
*Mainframe Hosting (Processing, Storage, Tapes, Backup)*  
*Managed Web Hosting*  
*Midrange Hosting (Server and Database)*  
*Midrange Storage*  
*Sharepoint Hosting*

**6.2 Application Hosting On DoIT Provided Equipment (Non-Executive Branch Departments)**

Application Hosting on DoIT provided equipment is available for non-executive branch departments with applications requiring the dedicated use of an operating system or resources beyond that which are available in a shared hosting environment. |

Feature	Description
Disk Space	Virtual Server: Up to 20 GB of disk space is included for a virtual machine. Capacity can be increased when procuring service by contacting DoIT. Dedicated or rack-mounted server: If the cost remains below \$X, there is no limitation on disk space. Additional disk space is available using the Storage Services Product. See appropriate product descriptions for Storage Services.
Server Resources	Virtual Server: 1 CPU and up to 3GB of RAM are allocated for

**Features Not Included**

Feature	Explanation
Server Administration	Server Administration is required but is not included in the pricing for this product. See the "Server Administration" product description and order form for additional information and to order the service. Application, hardware, and custom DoIT software is not included in this product.

**Rates and Billing**

Feature	Description	Base Rate
Monthly Charges	Dedicated Server Environment	\$BA (typically \$X per CPU core/month)
	Rack Space (VM not required)	\$X / per U / month
	WAN Charges (includes Security)	\$X/connection/month
	Server Administration (required)	\$BA /hourly

**Ordering and Provisioning**

Service can be procured, modified, or canceled by contacting the State of Illinois Service Desk either on the web at TBD or by phone at TBD. Service can also be procured through your assigned CRM, who can contact the State of Illinois Service Desk on the agency's behalf.

**DoIT / DoIT Responsibilities**

- Provide the secure physical facility and all environmental controls for the server and disk array.
- Monitor and maintain the integrity of the network.
- Install and maintain the server hardware.
- Coordinate scheduled downtime with customers.

**DoIT / Agency Responsibilities**

- Department DoIT personnel are responsible for all software licensing and support costs even though DoIT will install and provide local support as mentioned under DoIT Responsibilities.
- Develop and maintain the customer's database schema and the integrity of the data.
- Develop and maintain all application software running in customer's server instance.

**Service Levels and Metrics**

The State of Illinois Service Desk is accessible 24x7 by telephone at TBD. Live chat and direct user reporting of incidents are also available on the DoIT website at TBD. Published "Business Hours" for the DoIT Service are 7:00 AM-7:00 PM, Monday-Thursday. Hours of support-call coverage varies by Department/division/region and product.

Incident Response and Resolution Targets			
Time to Initial Response Targets	% Tickets	Total Time to Resolution Targets	% Tickets
Low priority - 1 Business hour	85%	Low priority - 6 Business hour	90%
Medium priority - 1 Business hour	85%	Medium priority - 4 Business hours	90%
High priority - 1 Clock hour	90%	High priority - 3 Clock hours	90%
Critical priority - 30 Clock minutes	95%	Critical priority - 3 Clock hours	90%

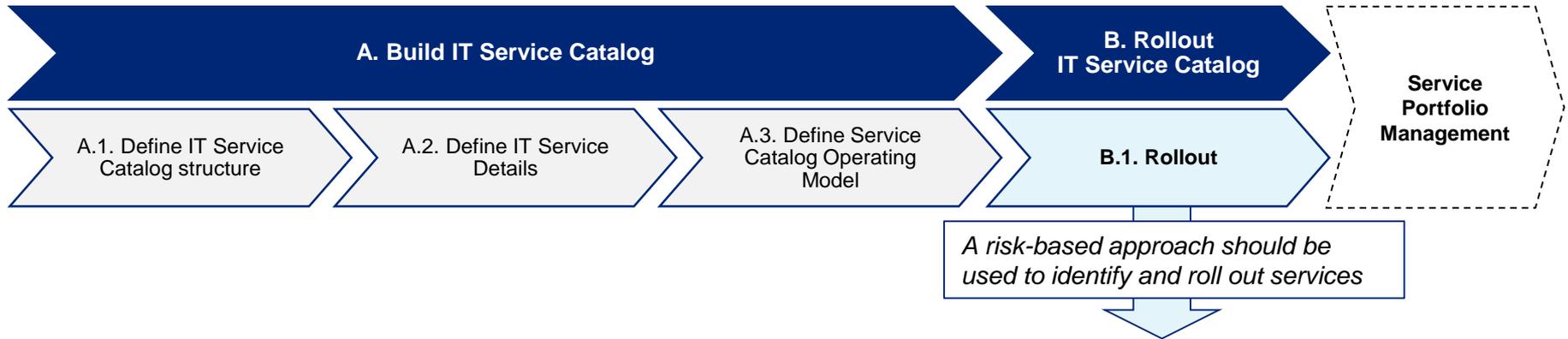
To be completed via the IT Service Management Process Improvement Initiative

Through working groups:

- Defined future state services list
  - 55 total services
  - 20 new or modified services
- Finalized parameters to capture within each service (i.e. Description, Features Included, Responsibilities, etc.)
- Documented service details for all services
  - Validated by Service Owners

# Step: Rollout Approach

For the rollout, services in the catalog were placed into categories based on the complexity to implement



## Service Classifications



**Group 0:**  
*Existing Service*

The service is performed today and is largely unchanged in the future



**Group 1:**  
*Low Complexity*

The service falls within an existing service domain area. There are similar services performed today (or performed informally); however, there is not an exact match in the current catalog. The service is one that can be standardized through a proven process.



**Group 2:**  
*Med. Complexity*

The service may not fall within an existing domain area; however, similar services are performed, though maybe informally. Typically the service is self contained within a single team or small group of teams, allowing easier coordination to execute the service

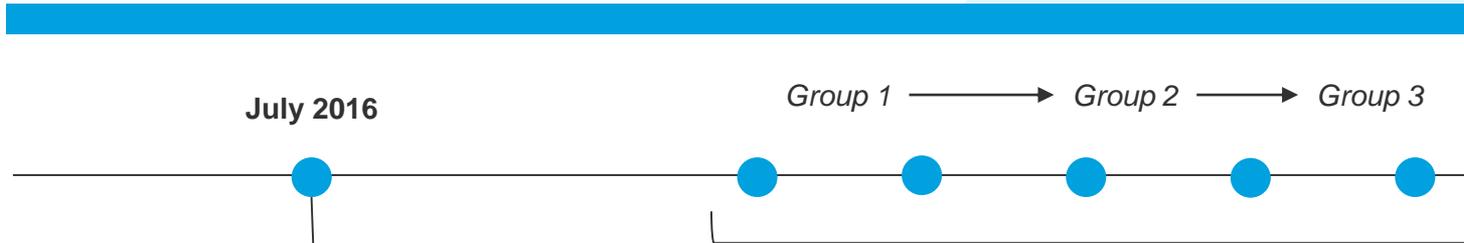
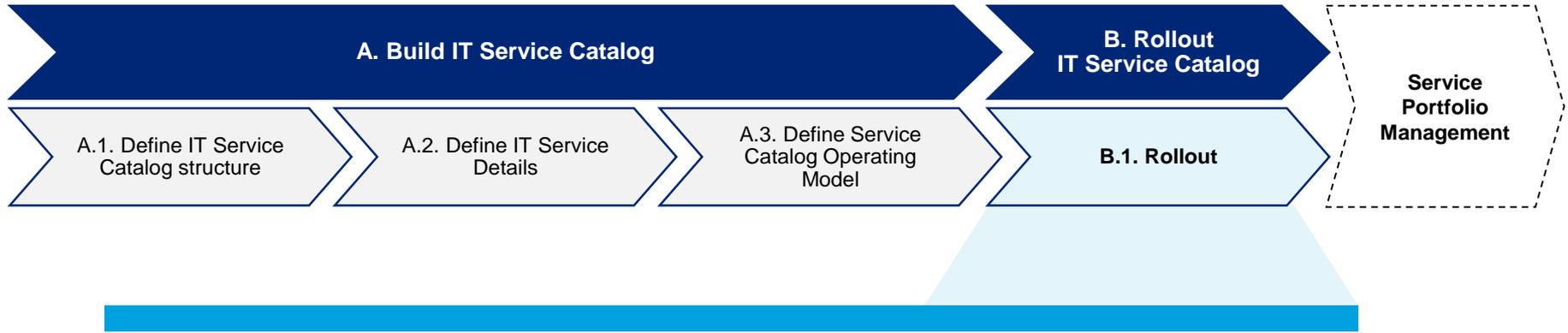


**Group 3:**  
*High Complexity*

The service is brand new or involves many separate teams to fulfill the request. Fulfillment processes are not or cannot be standardized due to variation in each fulfillment request.

# Step: Rollout

Each future state service will be implemented according to when the prerequisites are met



Initially, the online Service Catalog should be updated to include new services as well

- Existing services have data updated
- Retired services are removed
- Future services are added as a placeholder

Future services should be rolled out as soon as all prerequisites are met (examples below – full prerequisites will be defined in process guide):

- SOPs defined and teams are in place for fulfillment
- Service desk staff trained and in place for troubleshooting
- Technology configured
- Communications ready for distribution
- Dry runs executed

# Recommendations and Plan

**Objective:** Develop and implement a catalog of services that provides users with an accurate representation of the services offered

## Scope / Activities

- Define future state services
- Define IT service catalog structure
- Define IT service catalog details
- Define service catalog operating model
  - Tools to support the catalog
  - Processes for catalog lifecycle
  - Process interfaces and data exchanged
  - Governance and control points around the process
  - KPIs and reporting
- Update catalog on website
- Rollout IT catalog services

## Benefit Drivers

- Provides a single source for requesting services. Reduce manual form processing and time delays, while providing transparency into status of requests.
- Reduces risk of using unauthorized products or suppliers
- Improves customer satisfaction by establishing a single place for users to request and receive services from IT
- Improves the management of services provided since teams are able to monitor, manage, and report on requests from start to finish

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation															
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	1	2	3	4	5	6																				
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Define future state services																										
Define IT service catalog structure																										
Define IT service catalog details																										
Define service catalog operating model																										
Update catalog on website																										
Rollout IT catalog services																										

## C.4 Customer Engagement

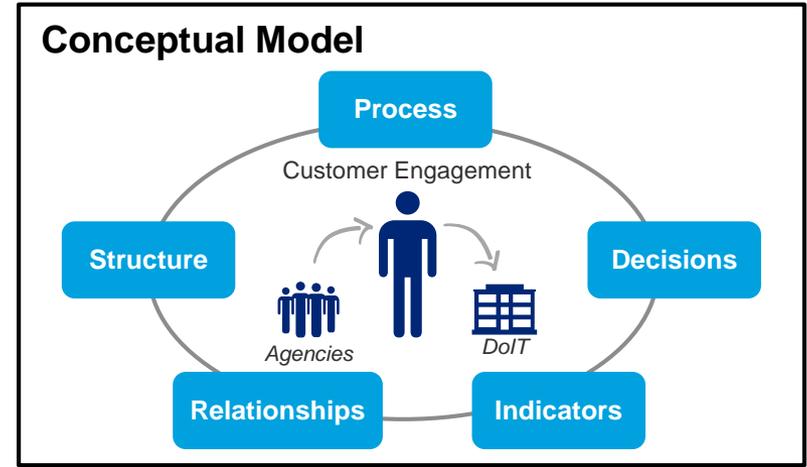
Customer Engagement is currently an informal process, and an approach has not been established or standardized across agencies to help address customer needs. There are some agencies that have resources dedicated to Customer Engagement roles, but the roles are not consistent across agencies.

Going forward, DoIT should put in place a model that builds consistency in the way that customers are engaged and overall enables DoIT to better serve their customers.

# Customer Engagement Vision

In order to live up to its “Customer Service” value, DoIT should build a customer engagement approach. The customer engagement role should expand beyond the agency relations role today and encompass additional value add services for agencies.

A move beyond the customer relationship means this role would focus on all aspects of interaction an agency has with DoIT, including services needed, requirements and satisfaction improvements.



## Objectives:

### Deeper engagement with agencies

- Expand the role of the agency relationship manager to encompass business relationship responsibilities
- Formalize and document roles and responsibilities

### Customer driven services

- Use proactive mechanisms, such as surveys, to gather information, requirements, and engage the agencies
- Utilize dedicated personnel to support agencies in order to put customers at the heart of the decision making process
- Gather monthly and quarterly feedback so customers can influence and shape the services they receive

## Outcomes:

### Agencies see DoIT as a trusted advisor

- Deeper level of engagement between DoIT and agencies
- Better understanding of services offered
- Clear support channels and escalation paths

### Service level alignment with service needs

- Faster response times and better services
- Firmer connection between service costs and service delivery
- Clear mechanisms to receive agency feedback
- Clarity on service delivery expectations

# Key Focus Areas – Recommendations

## People



- Identify specific resources dedicated to customer engagement and relationship management to support the relationship management function
- Expand the role of the agency relationship manager to also encompass typical business relationship responsibilities, such as: Managing personal relationships with agency managers; Providing input to Service Portfolio Management; Ensuring that the IT Service Provider is satisfying business needs
- Implement a hybrid approach for roles responsible for customer engagement in order to share information across clusters and agencies

## Process



- Use proactive processes to gather information, requirements, and collaborate across agencies and DoIT
- Standardize customer engagement processes across DoIT to provide the customer with a consistent experience with regards to engagement

## Technology



- Utilize a single tool across all agencies to conduct intake and prioritize requests (i.e. Extend Remedy IT to agencies)
- Configure automated surveys to be sent out after key events to monitor customer satisfaction with services provided by DoIT



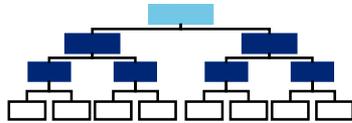


# Elements of the Customer Engagement Plan

Customer engagement is supported by structure, processes, decision rights, channels and indicators aligned with the strategy of the agencies

## Structure

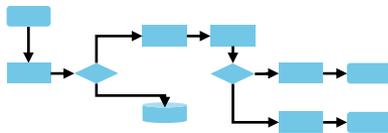
Organization, Systems and Capabilities



- Macro Functions
- Resources (e.g. people and capabilities quantity)
- Infrastructure

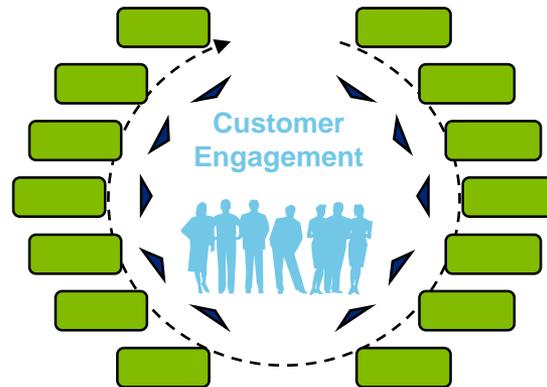
## Process

Activities, Roles and Responsibilities



- Key processes based on an ITIL
- Demand Management
- Processes supporting decisions

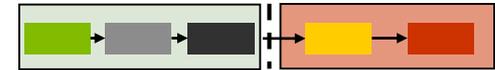
## Relationship Channels



- Structured program of relationship actions focused on
  - Agency interfaces
  - Operations
  - Problem resolution
  - Training
  - Communications

## Decision Rights

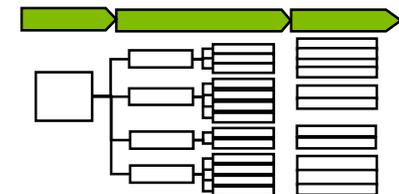
Management and Control



- Management Rights: Inform, Decide and Notify
- Control Rights: Ratify and Sanction

## Indicators

Monitoring



- Agency strategy and portfolio
- Objectives, indicators, service demand, and goals
- Service levels





# Structure: Customer Relationships

DoIT needs dedicated customer engagement roles in the organization structure to establish a trusted relationship between DoIT and the participating agencies

## Benefits of the DoIT-Customer Relationship Role:

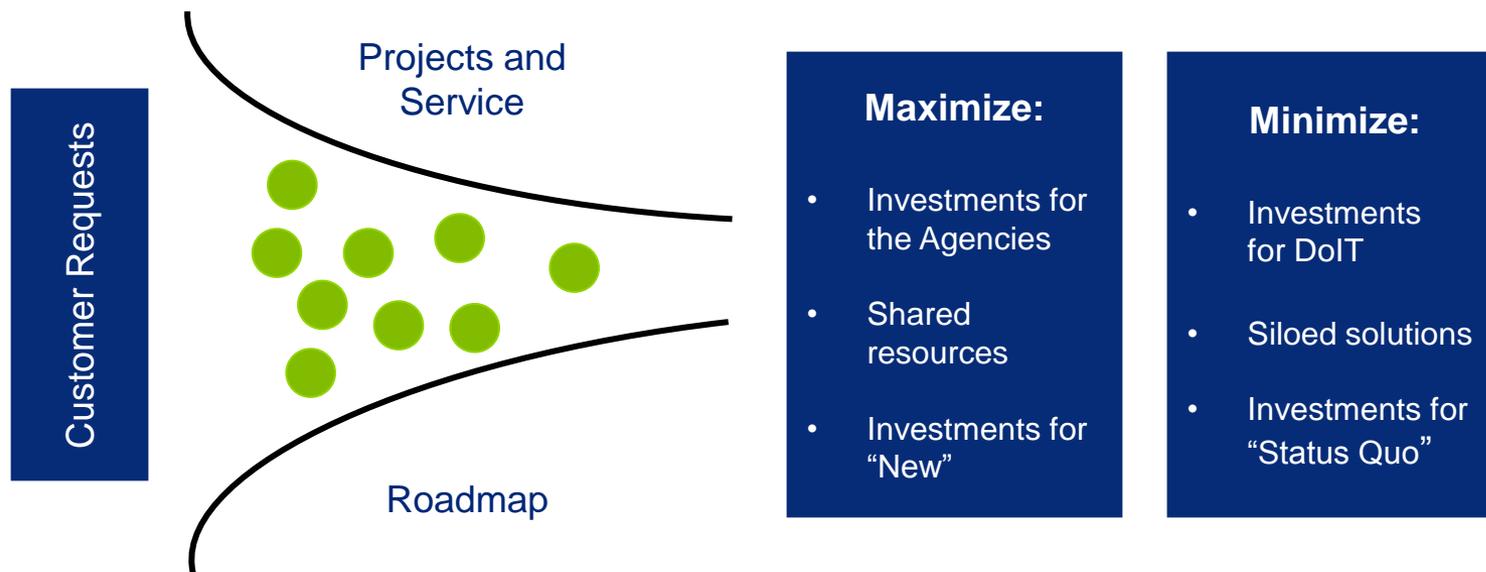
- A trusted advisor relationship for the agencies for DoIT services
- A dedicated stakeholder in DoIT to represent the priorities and imperatives and manage realistic expectations for all parties
- Agency representation that aligns DoIT to deliver agency specific priorities with alignment to the DoIT strategy and technology roadmap
- An approach to support evolution in the organization to address changing and evolving business requirements and priorities
- A true partnership between agencies and DoIT, with a clear understanding by all parties of the value and expectations of DoIT
- Robust business cases that comprehensively quantify costs and all potential benefits including the estimated improvements in sales/profitability and efficiency

By establishing clear roles and responsibilities, the DoIT organization and agencies will have open lines of communication, a defined understanding of the role, and improved interactions and service quality. (More on the organizational structure for customer engagement can be found in the Organizational Model deliverable).



# Process: Demand Management

Providing a process for customers to request new projects and services and making sure they are aligned with the State's strategic objectives is an important part of the Customer Engagement role



Managing the customer demand in DoIT is about leveraging the right assets and resources to deliver results that enable agencies to function and to grow by using shared resources, moving away from siloed solutions. Hence, the DoIT Customer Engagement must align strategies and priorities of the agencies while balancing expenditures to “keep the lights on.”

# Relationship Channels: Communications

Effective communication is imperative to fostering understanding and building the relationship between DoIT and end-users

**Central DoIT can support communication with the following activities:**

## DoIT Newsletter

- DoIT will send out a monthly newsletter from the CIO to keep end users informed and build their relationship with the DoIT team
- The DoIT newsletter will provide end-user focused content including new technology, training opportunities, changes to the service catalog, results of surveys, and results of Continual Service Improvement process

## DoIT Webpage

- DoIT webpage will provide DoIT service catalog as well as content including new laptops/mobile devices, new applications, information on workshops/training, and technology leading practices
- DoIT webpage will also provide lists of ongoing service outages and upcoming planned service outages

## Service Catalog

- A clear and user-friendly service catalog will allow end-users to better understand available DoIT services
- The service catalog will ease service procurement by allowing users to use and procure DoIT services without direct BRM interaction

## Enterprise Service Board Meetings

- Agency liasons will interface directly with DoIT leadership and Customer Engagement representatives during regular Enterprise Service Board Meetings
  - Large DoIT service changes are discussed with agency liasons to determine impact to end-users
- <Also see Governance deliverable >



# Relationship Channels: Survey Methodology

Surveys will be collected and analyzed using the following methodology

## Conduct Surveys

### Incident Based

DoIT conducts short surveys after service requests and incidents

- **Frequency:** Upon service ticket completion
- **Benefits:** Honest, immediate feedback tied to tickets

### Annual

DoIT customers provide formal feedback through broader, anonymous annual survey

- **Frequency:** Annually
- **Benefits:** Actionable input aligned with client organization goals; strong gauge of client satisfaction

## Data Aggregation & Organization

DoIT aggregates and organizes data in an intelligible and informative manner, providing the KPIs and other metrics required for analysis.

## Analysis & Conclusions

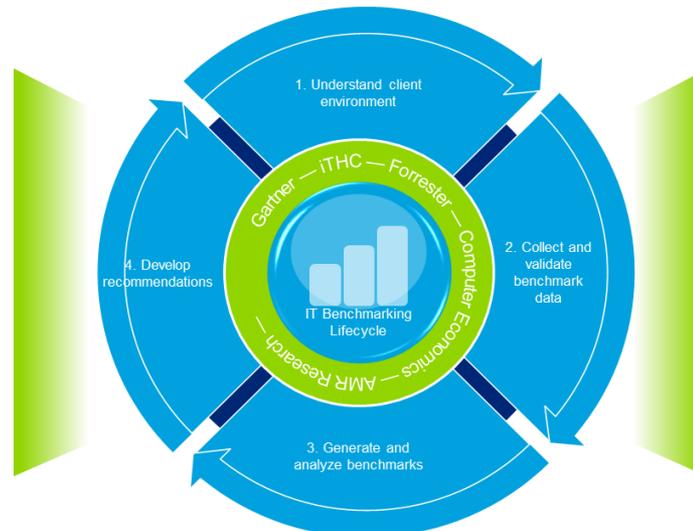
Analysis allows DoIT to make conclusions about the following:

- Quality of services
- Personnel competence
- Training needs
- Feasibility of goals
- Customer relationships

## Actions

DoIT uses the data-driven conclusions to develop future goals, State initiatives, and activities.

For example, if the data illustrates a perceived lack of expertise in a specific area, DoIT could begin a training program for practitioners to improve those specific skills.

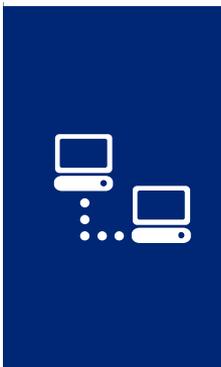




# Relationship Channels: Survey Recommendations

Customer Satisfaction Surveys should continue to be sent out after every customer engagement, as well as annually to determine overall DoIT customer service satisfaction

## Key Survey Recommendations:



- **Post-service surveys** should be tied to the service desk ticket number
  - This allows deeper analysis that can determine customer satisfaction with each service desk staff member, determine incident rates for each service, and determine satisfaction for resolutions to each service offering
  - The annual DoIT customer service satisfaction survey should be sent to all users and be kept anonymous

With tickets tied to each survey, DoIT should have a framework to analyze service management KPIs on an ongoing basis



- **Annual surveys** should have more questions for a deeper DoIT customer satisfaction understanding; incentives such as a raffle can be used to encourage staff to submit the longer annual survey





# Relationship Channels: Training

Training will increase end-user satisfaction through a deeper understanding of the available technology services DoIT provides



## Training to Maximize Application Investment

DoIT can offer optional training services for application capabilities. This will enable better adoption of the currently installed applications and maximize the investment in application capabilities



## Training for Basic Services

DoIT can offer periodic training services for existing software, including ERP and Microsoft office, as well as training for mobile phones, video conferencing, and other basic services



## Specialized Training Courses

Departments can reserve in-depth DoIT training courses for services not covered in the regular training series, including Unix, Windows, programming, networking, or application training





# Decision Rights: Enterprise Service Board

Enterprise Service Board meetings will lead to better alignment on DoIT service delivery and satisfaction

## Participants

- Key stakeholders from select departments
- Customer engagement representatives from DoIT
- DoIT leadership

## Topics

- Service Levels metrics and catalog review
- Ideas for new services
- Survey results and analysis
- Customer complaints
- Continuous Service Improvement Plans
- Rates for services

## Results

- DoIT will be more aware of customer needs and concerns
- Services in catalog will be updated, deleted, added, and/or renamed
- Survey results will be understood by both DoIT and agencies
- Common customer complaints will be addressed with service improvement plans

Enterprise Service Board meetings will be held quarterly to discuss key topics in Customer Engagement. As a result, DoIT and the agencies will be better aligned for DoIT service delivery and satisfaction. (For more on the Enterprise DoIT Service Board, see the IT Governance Deliverable).



# Indicators: Service Notifications

For both planned and unplanned service outages, a clear and consistent process must be established to effectively notify users of service disruptions

## Consistent, Prompt Notifications

- Service notifications should be approved by designated DoIT managers
- Notifications should be sent to affected users within 30 minutes of unplanned disruptions and at least 2 business days prior for planned disruptions, with a reminder the day of the planned disruption
- All planned disruptions should be discussed in regular Change Control Board meetings to determine impact to users
- Service restored messages should be sent promptly after service has been restored and verified

## Effective Communication

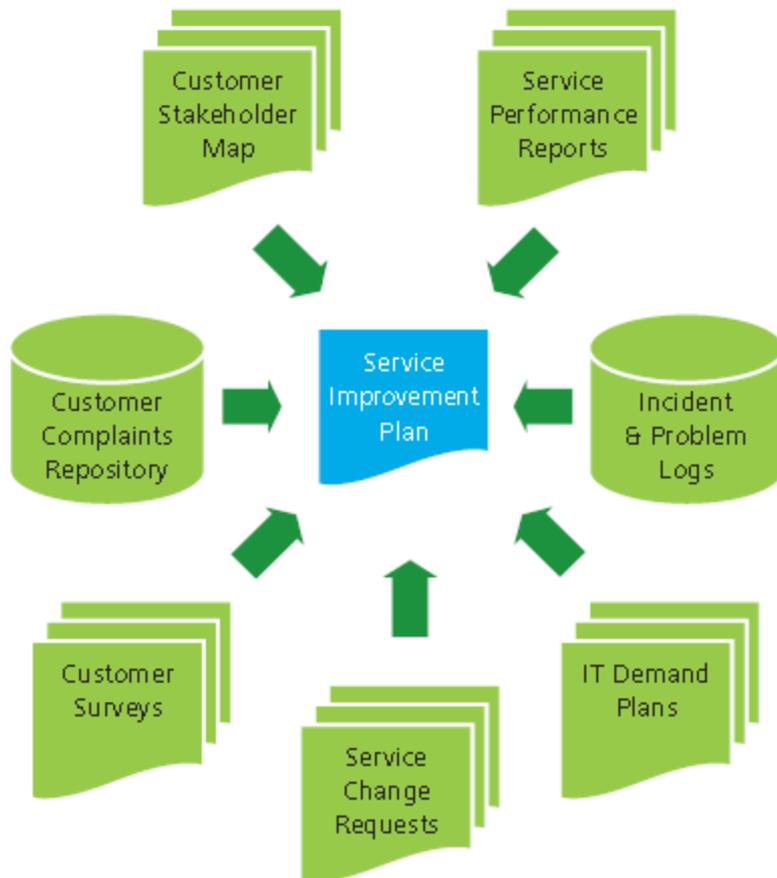
- Service notifications should only be sent to affected users to minimize the chance that users will begin ignoring notifications
- Service notifications should be in a consistent, DoIT branded format containing the following details:
  - When the disruption will occur
  - Reason/Cause of the disruption
  - What is happening
  - Who is impacted
  - What is being done to resolve the issue
  - What end-users need to know about the potential resolution

# Indicators: Service Improvement Plans

A Service Improvement Plan (SIP) should be created for each delivered service that falls consistently below the agreed-upon SLAs. SIPs define changes to services, plans for change implementation, and updated SLAs

## SIPs are developed from the following indicators:

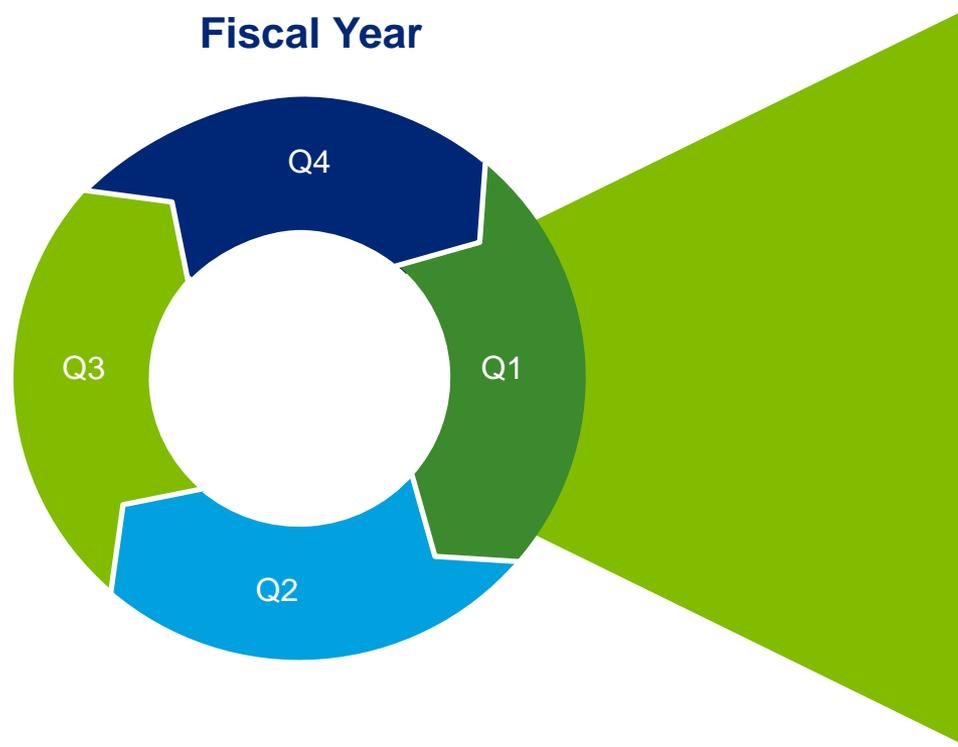
- **Service Performance Reports** record current performance against agreed upon SLAs during the assigned period
- **Incident & Problem Logs** record the current and historical incidents and problems in the live service environment. Incidents and problems can be analyzed to identify trends that indicate a systemic problem in live service that must be resolved through a formal SIP
- **DoIT Demand Plans** enable the DoIT service organization to size the required level of business- as-usual (BAU) support and project support, and thereby match resources to meet these requirements
- **Service Change Requests** are customer requests for new or updated services
- **Customer Surveys** provide an analysis into customer satisfaction for individual services and help desk technicians
- **Customer Complaints Repository** provides a consolidated view of formal complaints and remediation actions. Analysis of these can indicate where systemic problems exist
- **Customer Stakeholder Map** provide an overview of the key customer relationships based on ongoing interaction through the Customer Engagement process





# Indicators: Operations Measurements - Quarterly

After the agency relationship management function has been successfully implemented, there are several key ongoing activities that define the yearly operations for engagement



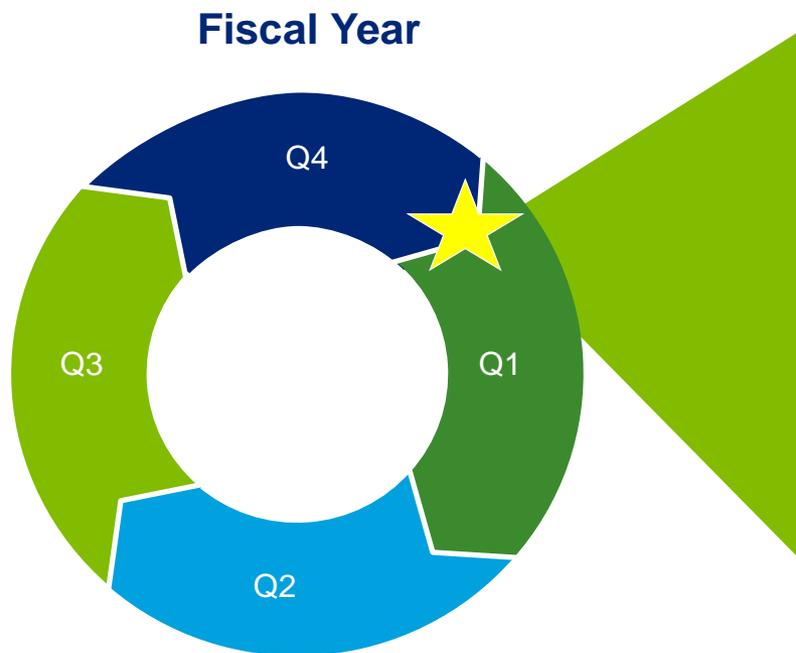
## Each Quarter of Fiscal Year

- Host quarterly enterprise Service Board meeting with DoIT stakeholders and representatives from each Department
- Review existing services and identify potential new services with Department and DoIT stakeholders
- Review KPIs and SLAs to ensure to determine overall customer satisfaction and areas for improvement
- Develop Service Improvement Plans for areas with low customer satisfaction
- Send DoIT Newsletter with end-user focused content

\* See slide 25

# Indicators: Operations Measurements - Annually

An annual survey and its results will help determine long term improvement plans that can be used to address common customer complaints or concerns



## Annual Activities

- Send out anonymous annual DoIT customer service survey to all end-users
- Analyze survey results and determine opportunities for improvement with DoIT stakeholders and Agency Relationship Management representatives
- Develop Service Improvement Plans for areas with low customer satisfaction
- Determine long-term Continuous Service Improvement plans

# Recommendations and Plan

**Objective:** Implement a customer engagement model to facilitate effective delivery of DoIT services to the end-users

## Scope / Activities

- Implement engagement structures (Covered as part of Organizational Model)
- Implement Customer Engagement Processes
- Define Relationship Channels
- Define Decision Rights
- Define and implement Indicators

## Benefit Drivers

- Helps to drive better service (e.g. faster response to, and resolution of issues; improved accuracy)
- Enables increased understanding of what services will be provided, and what can be expected
- Incentivizes DoIT to meet or exceed service level expectations and continuously improve
- Aligns customer needs to DoIT delivery
- Provides a means for DoIT to measure performance
- Helps DoIT leadership identify where they can keep costs low while maximizing efficiency
- Allows DoIT to make informed and appropriate organization and governance decisions (e.g. capital investments, software acquisitions, training, methodology implementation, staffing)

## Estimated Duration

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation															
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	1	2	3	4	5	6																				
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Engagement structures implemented	<i>Done as part of Talent Transformation</i>																									
Implement customer engagement processes	<i>Done as part of ITSM process standardization</i>																									
Define relationship channels	<i>Done as part of communications work stream</i>																									
Define decision rights																										
Define and implement indicators																										

# Section 4: Roadmap

# Mapping Initiatives to Strategic Objectives

The proposed initiatives are highlighted by domain below, along with alignment against strategic objectives

	#	Initiative Name	Strategic Objectives										
			1	2	3	4	5	6	7	8	9	10	
 <b>A.</b> Infrastructure	A.1	Infrastructure Transformation		✓							✓	✓	✓
	A.2	Infrastructure Modernization		✓	✓	✓	✓	✓			✓	✓	✓
	A.3	Backup and Recovery		✓		✓	✓	✓			✓		✓
	A.4	Cloud First Implementation		✓				✓			✓	✓	✓
 <b>B.</b> Applications	B.1	Application Rationalization		✓	✓	✓					✓	✓	✓
	B.2	Application Modernization		✓	✓	✓	✓	✓			✓	✓	✓
	B.3	Digital Innovation		✓		✓					✓		
 <b>C.</b> Service Management	C.1	Service Desk Integration		✓	✓				✓	✓	✓	✓	
	C.2	ITSM Process Standardization		✓	✓				✓	✓	✓	✓	✓
	C.3	Service Catalog	✓								✓		
	C.4	Customer Engagement	✓								✓		

1 Consider Agencies  
 2 Think State-wide

3 Common over Custom  
 4 Data is an Asset

5 Data Security  
 6 Use Standards

7 Customer Centric  
 8 Quality Operations

9 Simple over Complex  
 10 Reusable Design



Deloitte.

# Initiative Roadmap

Listed below are the corresponding projects underneath each IT priority

Month	Phase 1-Administrative Consolidation						Stage 2-Detailed Design				Stage 3-Implementation																	
	Sprint 1: High level design			Sprint 2: Day 0 readiness			7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
<b>6. Infrastructure and Applications</b>																												
Infrastructure consolidation																												
Define the IT infrastructure consolidation focus areas																												
Assess current IT infrastructure and agency status																												
Define infrastructure consolidation waves																												
Execute against roadmap																												
Infrastructure modernization																												
Assess current IT infrastructure standards																												
Establish future IT infrastructure standards																												
Gap analysis and recommendations (Roadmap)																												
Execute against the roadmap																												
Backup and disaster recovery																												
Analyze business impact																												
Develop backup and disaster recovery plans																												
Implement technology updates																												
Perform backup and disaster recovery tests																												
Cloud first implementation																												
Assessment																												
Opportunity analysis and future state definition																												
Roadmap and planning																												
Execution																												
Application rationalization																												
Define the application strategy and imperatives																												
Assess current application portfolio capabilities																												
Define future application portfolio																												
Develop future state roadmap																												
Conduct rationalization																												
Application modernization																												
Develop the future state modernization strategy																												
Design modernized applications																												
Develop and integrate modernized and mobile applications																												
Deploy modernized applications to achieve target state																												
Digital Innovation																												
Establish the current and target state																												
Develop roadmap																												
Execute Roadmap																												
<b>7. Unified Service Desk</b>																												
Service desk integration																												
Initiate planning and data gathering																												
Design operating model																												
Design service management processes																												
Prepare for transition																												
Conduct pilot																												
Conduct phased rollout																												
ITSM process improvement																												
Establish operating model																												
Establish standard operating procedures																												
Rollout core processes																												
Rollout processes supplemental to core processes																												
Rollout other service management processes																												
Rollout IT operational processes																												
Service catalog																												
Define future state services																												
Define IT service catalog structure																												
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Customer engagement																												
Engagement structures implemented																												
Implement customer engagement processes																												
Define relationship channels																												
Define decision rights																												
Define and implement indicators																												

# Common Challenges and Critical Success Factors

Listed below are some common challenges and critical success factors



# Measuring Implementation Progress

SOI should measure its IT Transformation Program implementation progress using a set of Key Performance Indicators (KPI) across the dimensions of efficiency and effectiveness

	Efficiency	Effectiveness
Infrastructure	<ul style="list-style-type: none"> <li>• Decreased cost to support each server</li> <li>• Reduction in number of servers supported outside data center</li> <li>• Reduction in time needed to restore service (due to virtual machines)</li> </ul>	<ul style="list-style-type: none"> <li>• Agencies consolidated</li> <li>• Agencies on Illinois.gov</li> <li>• End users covered by standard images</li> <li>• Servers managed centrally</li> <li>• Servers consolidated</li> <li>• Servers moved to Cloud</li> <li>• Virtual server penetration</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Reduction in application footprint / agency</li> <li>• Reduction in cost per application</li> <li>• Increase in users per application</li> <li>• Reduction in application licensing</li> </ul>	<ul style="list-style-type: none"> <li>• Applications with disaster recovery</li> <li>• Applications residing on virtual machines</li> <li>• Applications listed in portfolio</li> <li>• Applications with all required fields completed</li> <li>• Ratio of custom to COTS in portfolio</li> </ul>
IT Service Management	<ul style="list-style-type: none"> <li>• Reduction in incident resolution time</li> <li>• Reduction in time to provision services (due to defined procedures)</li> <li>• Reduction in cost per ticket</li> <li>• Increase in services provisioned within the service level targets</li> </ul>	<ul style="list-style-type: none"> <li>• Customer satisfaction (overall and completely satisfied)</li> <li>• New services live in production</li> <li>• Number of Processes defined / standardized</li> <li>• Ratio of fulfillment following standard processes</li> <li>• Services with service level targets</li> <li>• Agencies consolidated and using standard processes for incident and request management</li> </ul>

# Approach for Working Groups

To effectively move each initiative forward, SOI should utilize small “working groups” that are focused on driving the tasks of each initiative to closure

## Objectives:

- Develop shared priorities and encourage teams to align with a common vision for IT Transformation
- Create a culture of collaboration through knowledge and resource sharing, communications, and development of ideas and recommendations
- Work through key risks and challenges
- Shape deliverables and recommendations by providing accurate knowledge operations, dependencies, and constraints

## Guiding Principles:

- Act as an advisory group over the implementation of specific initiatives within the IT Transformation Program
- Set up scope to be modular to build on each other
- Build on small wins through pilots
- Use a collaborative approach to designing and implementing solutions
- Deploy open and transparent communications
- Maintain state-wide focus

## Member Expectations:

- Possess a deep understanding of specific IT focus area
- Gather detailed data relevant to the initiative
- Review analysis and outputs, provide feedback on results, and provide guidance on next steps
- Strong alignment with overall IT Transformation goals

